

A Review of Rentals for Pastoral Leases



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A
REVIEW
OF
RENTALS
FOR
PASTORAL LEASES

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FOREWORD

This Institute, from its inception, has continued to investigate aspects of management of tussock grasslands and mountain lands that were judged to be important for these lands or for their uses. In the course of our monitoring of pastoral production changes during the 1960s and early 1970s, some evidence emerged that suggested marked differences among different classes of runs in response in pastoral output to technological development. Such differences would in turn suggest fundamental differences in economic rent of pastoral lands. In our judgement, therefore, investigation was warranted into the theory and practice of rent of pastoral lands.

Work of collating pastoral production records in relation to resource endowment was begun at the Institute some time before the appointment of Mr Kerr as Management Officer. As the issues of pastoral land rent and land valuation became more topical, Mr Kerr became more deeply committed in this work and with the cooperation of major agencies involved, began the task of assembly and interpretation of the factual record of land valuation and rent since the 1948 Land Act came into operation. High Country Committee of Federated Farmers, Land Settlement Board and the Department of Lands and Survey have each indicated their interest in this investigation and have been advised of major progress stages in it. None of these organizations is in any way party to its findings, nor is the Economic Service of the Meat and Wool Boards or any Government department which assisted in great measure in the provision of primary data.

Mr Kerr has enjoyed the continuing guidance and valuable collaboration of Professor B.J. Ross, Head of the Department of Agricultural Economics and Marketing at Lincoln College and Mr R. Frizzell, Reader in Valuation in the Department of Farm Management and Valuation at Lincoln College. Together they have attempted to condense into comprehensible terms the theory of economic rent so that the practical record of rent for pastoral lands can be assessed in such a context.

In giving direction to this work I have been especially concerned that the Institute should produce a referential work of quality, competence and clarity. The authors of this study have received no commission to develop an optimal method of establishing rent nor does their work attempt to evaluate in great depth any of the past or current proposals for the fixing of rents. Their main purposes have been to trace the record of rent of pastoral lands during the last quarter century, to relate this record to other economic factors over that period, to present in summary form the theory of rent and to indicate the possible ways in which such theory might be applied in the practical circumstances of pastoral lands under prevailing economic conditions.

I believe that their work will be recognized as an essential document for study by those vitally interested in this question and especially by those responsible for legislation and administration in this field.

KEVIN F. O'CONNOR

Director

June, 1979

PASTORAL LEASES UNDER THE LAND ACT 1948

ESTABLISHMENT AND ADMINISTRATION

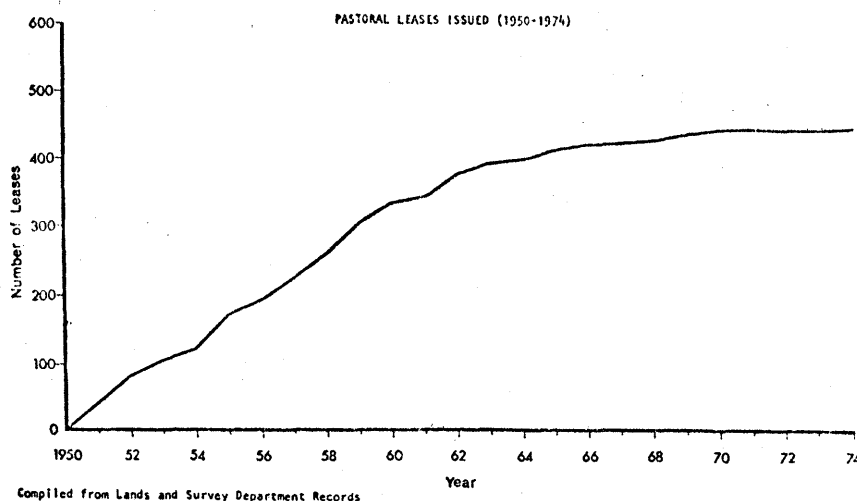
The pastoral lease tenure for Crown land came into being on April 1, 1949, following the passing of the Land Act, 1948. This Act was a consolidation of land laws existing at the time. The reason given by the then Minister of Lands, when introducing the Land Bill, for the establishment of a lease of this kind was "that it may be necessary for some control to be exercised over the type of land contained in the lease for soil conservation purposes to prevent erosion and regenerate some of the hill country contained in the lease".¹

Until the creation of the pastoral lease tenure almost all of the Crown land that was to be subject to pastoral lease tenure was held under either pastoral licence or small grazing-run lease tenure as provided by the Land Act, 1924. Both of these forms of tenure were usually issued for 21 years, had right of renewal (unless required for subdivision) and carried a right of freehold. Rent for all pastoral land was set by the Land Board through arbitration and generally at the prescribed rate for small grazing runs, i.e. 2½ per cent of sale value.

As at 31 March 1978 there were 465 pastoral leases current, involving 2.8m ha of Crown land.²

The Land Settlement Board, established under the Land Act, 1948, and taking the place of the previous Land Boards, has issued and administered pastoral leases since 1950. Figure 1 shows the number of individual or combined leases current each year since 1950.

FIGURE 1



The Land Settlement Board has the statutory duty to 'carry out the provisions of the Act for the administration, management, development, alienation, settlement, protection and care of Crown land...' The Board is required to have regard to any representations that may be made by the Minister in respect of exercising any powers and functions under the Act. Further, the Board is required to give effect to any decision of the government in relation to the Board's powers as functions when conveyed to it in writing by the Minister.³

The Land Settlement Board is serviced by the Department of Lands and Survey and is assisted by Land Settlement Committees in each land district. The Board has delegated authority in respect of cultivation, burning and stock limitation to Commissioners of Lands.⁴ Authority to control burning on pastoral leases has been sub-delegated to catchment authorities.⁵

HISTORICAL SUMMARY

The earliest tenure available for 'pastoral land' was the pasturage licence issued by the respective Provincial governments.⁶ The purpose of this licence was to encourage alienation of hitherto 'waste lands' not freeholded under the Colonial government policy of a 'sufficient price' for land.⁷ By 1865 most of the 'pastoral' land of New Zealand was occupied under a system of pasturage licences. Pasturage licences had a 10 year term at a rent of, initially, three farthings an acre, then 1½d an acre, with rights to pasturage only and pre-emptive rights to freehold up to 250 acres.⁸

After the abolition of Provincial government in 1876 pastoral land was administered for the Crown by Land Boards. New legislation in 1877⁹ initiated a classification of pastoral licences according to their productive and location endowments. This 'valuation' was the basis for arbitration of rent payable between 9d and 24d per head for sheep and 48d and 120d per head for cattle. This 1877 legislation also made auction of leases at expiry mandatory, allowed resumption of lease by the Crown at 12 months notice, granted a pre-emptive right to 320 acres freehold, and allowed deferred payment purchase of pastoral licences at an upset price of £1/ac. An 1882¹⁰ amendment to the Land Act extended the term of the licence to 21 years and cancelled the pre-emptive rights to freehold. Compensation for improvements (up to three times rent paid) made by the licensee was provided for in legislation passed in 1885.¹¹

The same legislation proclaimed the small grazing run tenure of 21 year leases with right of renewal at rents of 2½ per cent of sale value for lots up to 5000 acres.

In 1892¹² pastoral licences became subject to husbandry conditions which prevented the burning of bush, required the control of gorse, broom and sweet brier and the destruction of rabbits. Similarly, in 1907¹³ cultivation for crops not for sale was allowed, subject to Land Board approval. From 1907 there was no limit on compensation for improvements made on the lease.

The insecurity of pastoral licence tenure provided for in the foregoing legislation, coupled with a series of adverse climatic events and financial reverses, precipitated 'grid ironing' (purchase of strategic land within the run), over-stocking, and a monotonous series of business failures. By comparison, the same measure of insecurity did not apply to small grazing run leases, principally because these runs were on better land and the leases contained rights of renewal (at arbitration) and full compensation for improvements.

Following the reports of the Royal Commission on Land Settlement and Tenure (1905)¹⁴ and the Royal Commission on Canterbury Pastoral Lands Classification (1910),¹⁵ legislation was enacted by government in 1912¹⁶ to allow extension of pastoral licences (for up to seven years) if runs suffered from heavy snow losses. Of greatest significance was the right of renewal of licences, introduced in 1913.¹⁷

A 1920 Royal Commission on Southern Pastoral Lands¹⁸ reported widespread deterioration of land in the South Island high country and made several recommendations that were incorporated in a 1921-22 amendment to the Land Act.¹⁹ In particular, the maximum term of a pastoral licence was extended to thirty-five years. As was the case with holders of small grazing run leases after 1913, pastoral run licencees were given a conditional right to freehold. Conditions requiring improvements to be made, control of burning and good husbandry were added to pastoral licences from this time. Failure to fulfil these conditions (along with failure to pay rent) became grounds for forfeiture of leases in 1924.²⁰ Provisions for remission of rent in times of severe adversity came into effect in

1924 and were extended in 1925 and 1926. No major changes in pastoral land law were made from then until the Land Act, 1948.

CONDITIONS OF TENURE

A purpose of the pastoral lease tenure was to give a secure form of tenure to land classified by the Land Settlement Board as being suitable or adaptable only for pastoral purposes.²¹

Pastoral leases under the Land Act, 1948, entitle lessees to the exclusive right to the pasturage over the land comprised in the leases, but give no right to the soil. They have a term of 33 years with perpetual right of renewal, but carry no right of freehold. A 'fair annual rent' is fixed by the Land Settlement Board. The Board is not required to set a rental value for the land. Reviews of rent, following renewal of lease, are currently carried out every eleven years.²²

Every pastoral lease may be subject to stock restrictions. Apart from conditions governing good husbandry and improvements, and residence, that are common to all Crown leases, pastoral leases are subject to further conditions set by the Board governing the number of stock that might be carried, the burning of vegetation, the cultivation, cropping and grassing of land, travelling stock and the adjustment of boundaries.²³

NUMBER AND AREA

TABLE 1

NUMBER AND AREA OF INDIVIDUAL OR COMBINED PASTORAL LEASES

Land District	Number	Area (ha)			range
		Total	\bar{x}	σ	
Marlborough-Nelson	17	167539	9855	10390	417 - 28126
Canterbury	119	999692	8401	9848	230 - 76550
Otago	268	1326345	4949	4968	269 - 25453
Southland	46	329928	7172	10384	273 - 51824
TOTAL:	450	2823504	6275	7591	230 - 76550

NOTE: \bar{x} = mean

σ = standard deviation (range within which two-thirds of all pastoral leases fall)

Of the 450 pastoral leases, or combinations of pastoral leases examined, 247 (55 per cent) are within the high country and the balance, 203 (45 per cent) are South Island hill country properties.

ASSOCIATED TENURE

It was found that 341 (76%) of the 450 pastoral leases, or combinations of pastoral leases, are farmed in association with other tenures or other pastoral leases, and 109 (24%) are farmed without other tenures or pastoral leases.

The following table (Table 2) shows the tenure of land farmed in association with pastoral leases.

TABLE 2
TENURE OF LAND FARMED IN ASSOCIATION WITH PASTORAL LEASES

	Number of Leases	Mean Area (ha)
Pastoral leases - with other tenures	341	6117
- freehold	259	809
- deferred payment licence	13	815
- lease in perpetuity	32	298
- renewable lease	50	690
- university lease	7	8965
- county lease	7	277
- forest lease	6	1023
- occupation licence	26	4690
- special lease	11	181
- army lease	3	1957
- miscellaneous licence	25	224
- National Park lease	3	3037
- other pastoral lease	32	5440
Pastoral leases - with no other tenure	109	6766

CLIMATE

A classification of the major producing portion of pastoral leases, according to the amount of annual rainfall received and the length of time of moisture deficit, is tabulated in Table 3.

TABLE 3

CLIMATE ZONE OF MAJOR PRODUCING PART OF PASTORAL LEASES

Climate Zone	Marlborough Nelson	Canterbury	Otago	Southland	Total
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)
'Low'	0	14 (3)	132 (29)	0	146 (32)
'Moderate'	1 (-)	41 (9)	20 (4)	0	62 (14)
'High'	16 (4)	64 (14)	116 (26)	46 (10)	242 (54)
TOTAL:	17 (4)	119 (26)	268 (60)	46 (10)	450 (100)

NOTE: Low = less than 500mm rainfall, 8 months moisture deficit

Moderate = 500 - 1000mm rainfall, 6 months moisture deficit

High = greater than 1000mm rainfall, short periods of moisture deficit

As shown in Table 2, 32 per cent of the leases comprise land in the 'low' rainfall zone which has less than 500mm rainfall each year and is subject to eight months of moisture deficit in a year. Some 242 (54 per cent) of the leases are considered to lie predominantly within a 'high' rainfall zone of greater than 1000mm annual rainfall and experience only short periods of moisture deficit. The balance of the runs (62, 14 per cent) are considered to lie within a 'moderate' rainfall zone with an average rainfall range of 500mm to 1000mm and normally experiencing six months moisture deficit in a year.

PARENT MATERIAL

The parent material of the principal soil sets of the most productive portion of pastoral leases is shown in Table 4.

TABLE 4

PARENT MATERIAL OF SOILS OF MOST PRODUCTIVE PART OF PASTORAL LEASES

Parent Material	Marlborough Nelson		Canterbury		Otago		Southland		Total	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Greywacke gravels	0	(0)	12	(3)	0	(0)	0	(0)	12	(3)
Till	0	(0)	23	(5)	7	(2)	2	(-)	32	(7)
Greywacke	15	(3)	70	(16)	28	(6)	12	(3)	125	(28)
Chlorite II	0	(0)	11	(2)	17	(4)	20	(4)	48	(11)
Chlorite III	1	(-)	0	(0)	33	(7)	2	(-)	36	(8)
Chlorite IV	0	(0)	0	(0)	147	(33)	1	(-)	148	(33)
Loess	0	(0)	0	(0)	31	(7)	2	(-)	33	(7)
Volcanic	0	(0)	1	(-)	0	(0)	0	(0)	1	(-)
Other	1	(-)	2	(-)	5	(-)	7	(2)	15	(3)
TOTAL:	17	(4)	119	(26)	268	(60)	46	(10)	450	(100)

The schistose parent materials (chlorite II - IV) which predominate on 52 per cent of the leases, may reflect more responsive soils than those derived from greywacke.

RELIEF AND SNOW RISK

The general relief of the productive land within pastoral leases, together with an assessed snow risk to livestock, is shown in Table 5. It is noteworthy that a high proportion (81 per cent) are of hill topography and that few are steep (five per cent).

TABLE 5

RELIEF AND SNOW RISK OF PASTORAL LEASES

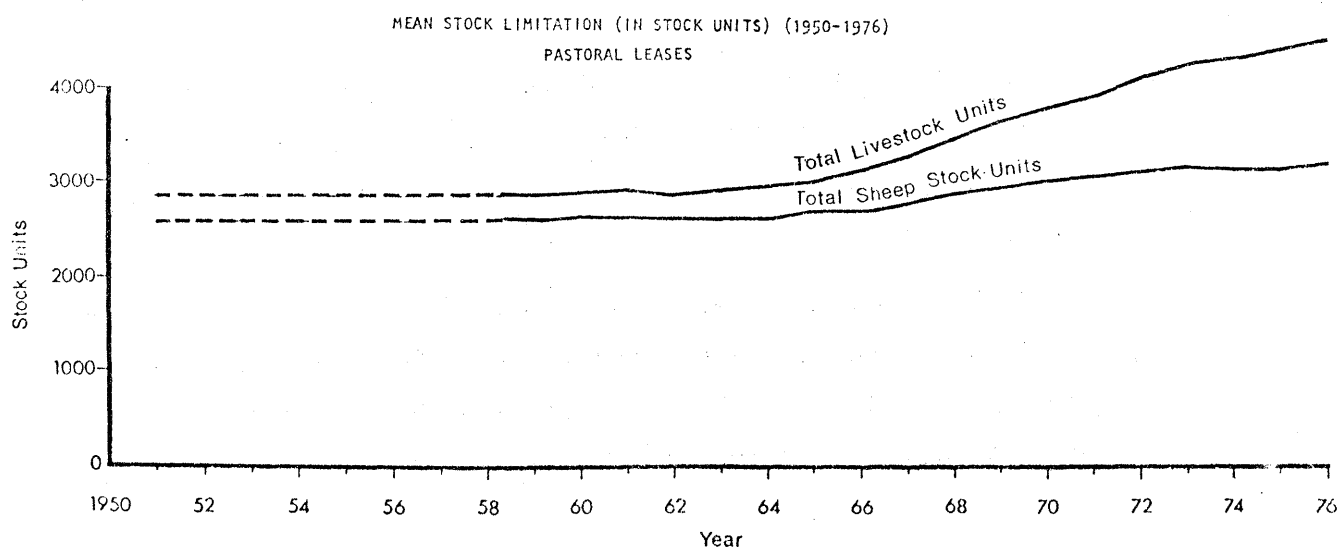
Relief	Snow Risk				Total	(%)
	High	(%)	Mod.	(%)		
Low (flat)	2	-	5	(1)	7	(2)
Moderate (rolling)	20	(4)	37	(8)	57	(12)
High (hill)	124	(28)	240	(53)	364	(81)
Extreme (steep land)	17	(4)	5	(1)	22	(5)
TOTAL:	163	(36)	287	(64)	450	(100)

Whilst all leases are subject to some snow risk, 36 per cent are regarded as being in a high risk zone. These runs are principally those situated in the 'gorges' and higher lands of Canterbury (16 per cent) and Otago (16 per cent).

STOCK LIMITATION

Changes in mean stock limitation per lease are indicated in Figure 2. There has been a 61 per cent increase in overall stock limitation since 1950. Cattle have increased 414 per cent over this period and sheep 26 per cent. The compound increase in mean stock limitation (as stock units) over the period 1950-1976 is three per cent per annum.

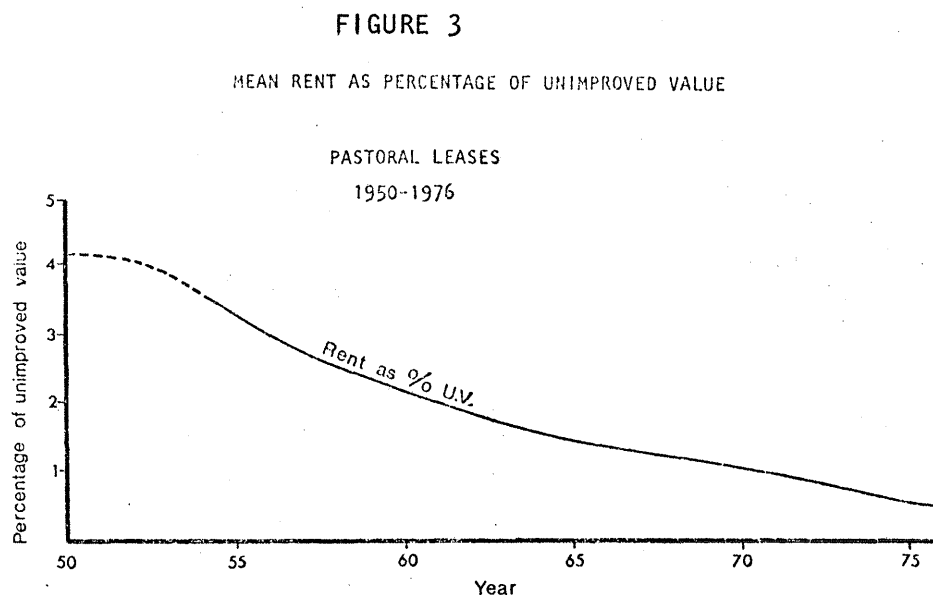
FIGURE 2



RENT

The mean rent for 450 pastoral leases farmed either individually or in combination, is \$420. The annual rent for two-thirds of all pastoral leases is within a range of \$262 - \$578 and the absolute range in rents per lease is \$25 to \$3340.

The mean annual rent of pastoral leases, over the period 1950 - 1976, in relationship to the unimproved value of land, is shown in Figure 3.



The mean annual rent of pastoral leases is \$0.15 per initial stock unit in stock limitation and 2.13 per cent of unimproved value.

REVIEW OF RENTAL POLICY

Consideration of policy for fixing a 'fair annual rent' for pastoral leases has been a matter of continuing concern to the Land Settlement Board since its establishment in 1948. The initial policy of the Board for fixing a 'fair rent' appears to have been one of aiming to 'find a basis of fixation which will

promote good husbandry, the all-important factor in the national interest'.²⁴

A rental based on unimproved value was considered by those administering pastoral land to be 'unrealistic' as far as pastoral land was concerned. The reason for this view has not been clearly enunciated, apart from an opinion that 'the factors entering into rent fixation did not apply on pastoral land with equal force in the case of ordinary farm land which is let at a rental based on unimproved value'.²⁵

The method of rent fixation chosen was based on the carrying capacity of the unimproved run at the date of issue of the lease. It was to be generally assumed that the lease was in 'good heart' at the date of issue and that 'an average carrying capacity related to net returns over a spread of years' had been established for the lease.²⁶ The possibilities of 'special factors' such as a severe infestation of rabbits were noted. It was policy for the Chief Pastoral Lands Officer to discuss with each lessee what his recommended rental would be and that such discussion should be frank and include negotiation for 'regrouping' as provided for in the Land Act, 1948. If, at the date of rental fixation, the carrying capacity of the lease was 'below par', recommendations for reduced rent for a period (as provided for in S 57(1) of the Land Act, 1948) were to be considered as a means of bringing the lease into 'good heart', subject to any husbandry conditions set by the Board.²⁷

A formula was devised by the Chief Pastoral Lands Officer to assist in assessing rentals for pastoral leases. The rate per 1000 stock units was to be \$140 for an 'average' pastoral lease. Adjustments (up or down) were to be made at the rate of \$4 per 1000 stock units for each 2½ per cent change in lambing, 2½ per cent change in death rate and \$10 per 1000 stock units for each 0.4kg change in wool per sheep. Other factors to be considered were access, mustering conditions and distance from railhead. Maximum rate was to be \$200 per 1000 stock units and the minimum rate \$100 per 1000 stock units.²⁸

At that point the methods of rent fixation for pastoral leases had contained many elements of arbitration between lessee and lessor. In spite of a recognised need to do so, no significant regrouping took place during the negotiations.

Concern was expressed by Commissioners of Crown Lands as early as 1953 that there would be a disparity between the current market value and the rents of pastoral leases. It was agreed at a Departmental Conference in 1957 that the Chief Pastoral Lands Officer would 're-examine his rates per 1000 and step up the rates ruling at June 1956'.²⁹ Some minor adjustments were made by the Board as a result of this re-examination. A similar review of rates was undertaken in 1965. The then Minister of Lands informed the Mackenzie Branch of Federated Farmers in June 1965 that the Land Settlement Board had not approved any change in the basis for fixing rent 'from that which was used for runs which had been renewed for some years' and would not do so without first consulting the High Country Committee of Federated Farmers'.³⁰

It was decided by the Board in June 1966 (on receipt of recommendations for increasing the rates per 1000 s.u. for assessing rent) that it was undesirable to change the rental basis as there were but a few Pastoral Run Licences remaining to be renewed as pastoral leases.

CURRENT POLICY

In the early 1970's, consideration was being given to the basis of future rentals. A working party was set up by the Director-General of Lands in 1971 to 'examine alternative methods of fixing "a fair annual rent" on renewal of pastoral leases and to recommend the most suitable method'.³¹ The working party sought submissions from Commissioners of Crown Lands and reviewed alternative methods which were principally either (a) rent based on a rate per 1000 s.u. as before; (b) rent based on the value of land exclusive of improvements. The Land Settlement Board, on receiving this report as a whole, decided in 1972 that 'the basis of rental for all pastoral properties should be the value of the land exclusive of improvements at a rental rate of 3%'.³² In further consideration of the working party's report, the Board decided in 1973 to set out and explain all the resolutions of the Board on pastoral lands policy in a paper which would be discussed with the High Country Committee of Federated Farmers before implementation. In 1974 the Board decided as pastoral lands policy that 'the fair annual rent for a pastoral lease shall be three per cent with a rebate of 10 per cent for prompt payment, giving a net rental rate of 2.7 per cent. The rental value is to be the value of land exclusive of improvements assessed on a pastoral farming use and ignoring any potential for tourism or other non-farming purpose, but taking into

consideration the stocking limitations required to protect soil, vegetation and water values'. The Minister of Lands approved the policy.³³

In 1975, the High Country Committee of Federated Farmers expressed concern that a three per cent rental rate on current values of land exclusive of improvements would be 'crippling'.³⁴ Early in 1976 the Board, in view of the concern of pastoral lessees, announced it would re-open the matter of pastoral rents for discussion with High Country Committee of Federated Farmers. The Board considered that whatever system was used, it should be:-

- (a) related to some proveable factor;
- (b) fair to lessee, lessor and renewable lease lessees;
- (c) in the interests of the country itself.³⁵

In 1976, the Land Settlement Board resolved to set up a sub-committee consisting of Fields Director, Valuer General and two farmer Board members to consider the matter of pastoral rents and advise the Board. The sub-committee sought submissions from all lessees, interested persons and organisations on what they regarded as appropriate for rent-fixing procedures for pastoral leases.

In May 1978 the sub-committee recommended to the Board that the rent for pastoral leases should be three per cent of value of land exclusive of improvements. It was recommended that this three per cent rental should be progressively introduced in three equal stages over 33 years, beginning with $1\frac{1}{2}$ per cent for the first eleven years, two per cent for the second eleven years and $2\frac{1}{2}$ per cent for the third eleven years. In recognition of the concession of a progressive introduction of three per cent rental it was recommended by the sub-committee that the differences between a three per cent rent and the proposed rent for each step ($1\frac{1}{2}$, 1, $\frac{1}{2}$ per cent LEI) should be rebated as a suspensory loan written off after eleven years - provided that this loan was expended on approved capital or maintenance works on the farming unit. In the event of a sale of a pastoral lease to other than a direct family descendant, the sub-committee recommended the suspensory loan should be repaid to the Crown in full.

As an alternative to the three per cent rent it was recommended by the committee that lessees be offered the opportunity to prepay 90 per cent of the rent in perpetuity through purchase (on a 30 year deferred payment licence basis at $6\frac{1}{2}$ per cent interest) of 90 per cent of the rental value (value of land exclusive of improvements) less the present value (at $4\frac{1}{2}$ per cent) of the lessee's goodwill in the unexpired term of the lease.³⁶

The Land Settlement Board agreed with the committee's recommendation and the Minister of Lands approved the Board's adoption of it as policy.

An amendment to the Land Act 1948 is proposed to allow this policy to be implemented.

VALUATION OF PASTORAL LEASES

CAPITAL VALUE

According to the Land Act, 1948, "the expression 'capital value' means the sum which the land and improvements thereon might be expected to realise at the time of valuation if offered for sale, unencumbered by any mortgage or charge thereon, on such reasonable terms and conditions as a bona fide seller might be expected to require".¹

This definition of capital value differs very little from that contained in the Valuation of Land Act, 1951, and has been interpreted by the Courts to mean the same.²

As there are comparatively few freehold properties on high country land that would normally be classified by the Land Settlement Board as 'pastoral land', the assessment of capital value of high country pastoral leases requires a somewhat subjective exercise in adjustment of leasehold sale prices to a freehold sale basis.

VALUE OF IMPROVEMENTS

The definition of the value of the improvements under the Land Act 1948 differs from that under the Valuation of Land Act 1951. However, in both Acts, improvements are defined as giving 'added value' to the land. The Land Valuation Court has, in the past, taken the view that, for most practical purposes, the separate definitions have the same general meaning.³

The Land Act 1948 defines improvements as meaning substantial improvements of a permanent nature, created by expenditure of capital and labour, and includes reclamation from swamps; clearing of bush, gorse, broom, sweet brier or scrub; cultivation; planting with trees or live hedges; the laying out and cultivating of gardens; fencing (including rabbit-proof fencing); draining; roading; bridging; sinking of wells and bores, or construction of water tanks, water supplies, water races, irrigation works, head races, border dykes or sheep dips; making embankments or protective works of any kind; in any way improving the character or fertility of the soil; the erection of any building and the installation of any telephone or any electric lighting or electric power plant.⁴ This list is not regarded as exhaustive. Whether cultural improvements are permanent or transitory is a matter of fact.⁵

The value of the improvements listed above means the "added value which at the time of valuation these improvements give to the land".⁶

By comparison, the Valuation of Land Act, 1951 absorbs reclamation from the sea (but not lake, river or other than sea) into the unimproved value. Subdivision costs (roading, drainage, water supply systems) are not improvements after the land has been disposed of.⁷

As value is market value, it is clear that the value of improvements on a property are not the costs of the improvements but rather the added value given to the property as a whole by the improvements.

UNIMPROVED VALUE/VALUE OF LAND EXCLUSIVE OF IMPROVEMENTS

The Valuation of Land Act, 1951 prescribes unimproved value of land to be an estimate of the market value of the land (in its legal sense) as if no improvements had been made to the land, but it was never-the-less in the existing environment.⁸ The market value of the land must always be consistent with its best use. It has been accepted that the value of land exclusive of improvements under the Land Act, 1948 is generally the same as unimproved value under the Valuation of Land Act, 1951, when the value of improvements is the same under each Act.⁹

It has been well established that determination of unimproved value by deduction of the value of improvements from the capital value is unsound.¹⁰ In ascertaining unimproved value, improvements must be considered as being non-existent.¹¹ Unimproved value must be assessed 'on the assumption that the block of land being valued had remained in an undeveloped state, but the surrounding district was in its present state of development'.¹² The price paid by an informed purchaser of unimproved land will be largely influenced by the productivity of land in relation to its development costs and annual expenditure, together with the services available and the cost to the land.¹³ Unimproved value of land which has reverted is accepted by courts to reflect the undeveloped state of the land at the date of valuation.¹⁴

Nationwide, sales of unimproved land are very rare indeed, and sound evidence as to the original state of the land is becoming scarce. Pastoral land, however,

is comparatively less developed than other farm land and can more readily be visualised 'in its natural state' or 'undeveloped state'.¹⁵

RENTAL VALUE

"Not earlier than two years and not later than one year before the expiry of a renewable lease" (but not a pastoral lease), the Land Settlement Board "shall cause the following values to be ascertained:

- (a) The value of the improvements which are then in existence and unexhausted on the land included in the lease.
- (b) The value at the commencement of the lease of all improvements included in the rental value at the commencement of the lease.
- (c) The value of the land included in the lease exclusive of the improvements."¹⁶

It is a provision under the Land Act 1948 (S 131), that in determining the above values:

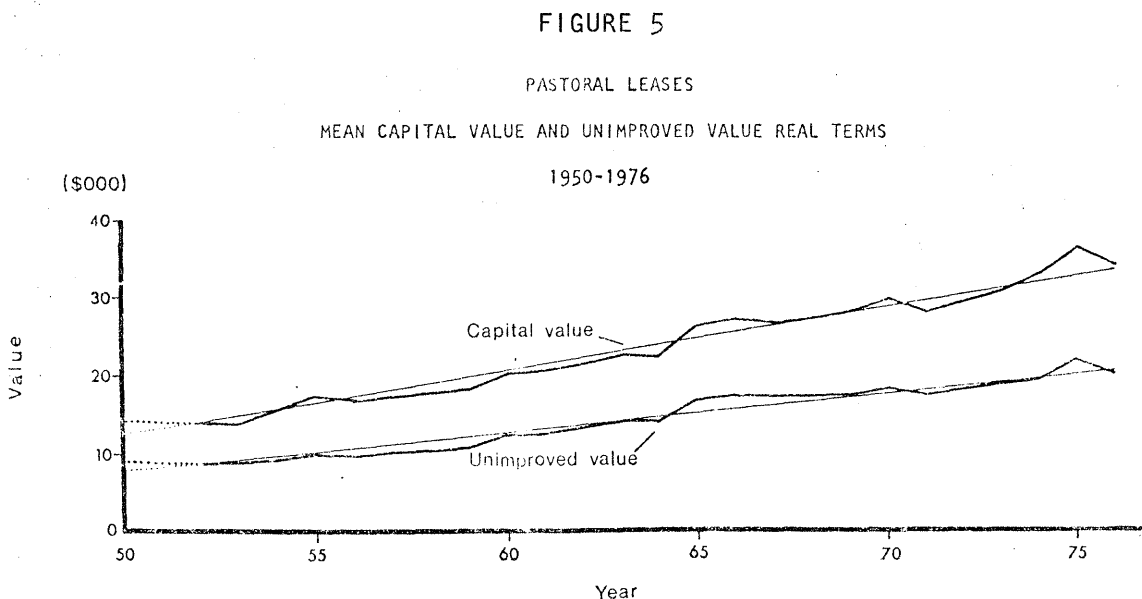
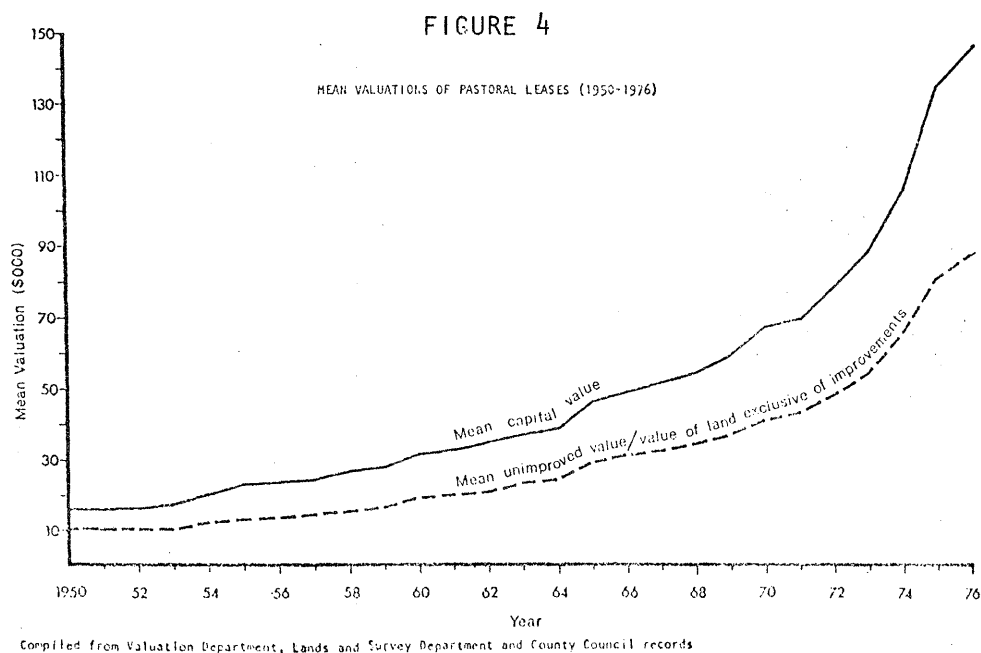
- (a) equal emphasis shall be placed on the values to be ascertained;
- (b) the values shall be ascertained on an equitable basis, having regard to the relationship between lessor and lessee;
- (c) the sum of the value of improvements and the value of the land exclusive of improvements shall equal the capital value of the land.

In the event of the necessity for rental values for pastoral leases to be established, it is likely that the above procedures will be followed. It has been stated that any rental value of pastoral land set by the Land Settlement Board shall be the value of land exclusive of improvements excluding any potential value for non-farming purposes. Land with other uses or those complementary to farming is unlikely to be utilized to its full resource capacity if subject to institutional restraints of rental value. Conversely any land that is being used for pastoral purposes in any way prejudicial to the public interest may be over-valued for pastoral rental purposes and under-valued for a more appropriate use. How the influences of potential alternative uses on the rental value of pastoral land can be accurately assessed is a matter of conjecture, subject as it is to both the institutional restraints of the Land Act 1948 and other statutory restraints on the private use of alienated land.

CHANGES IN VALUE OF PASTORAL LEASE

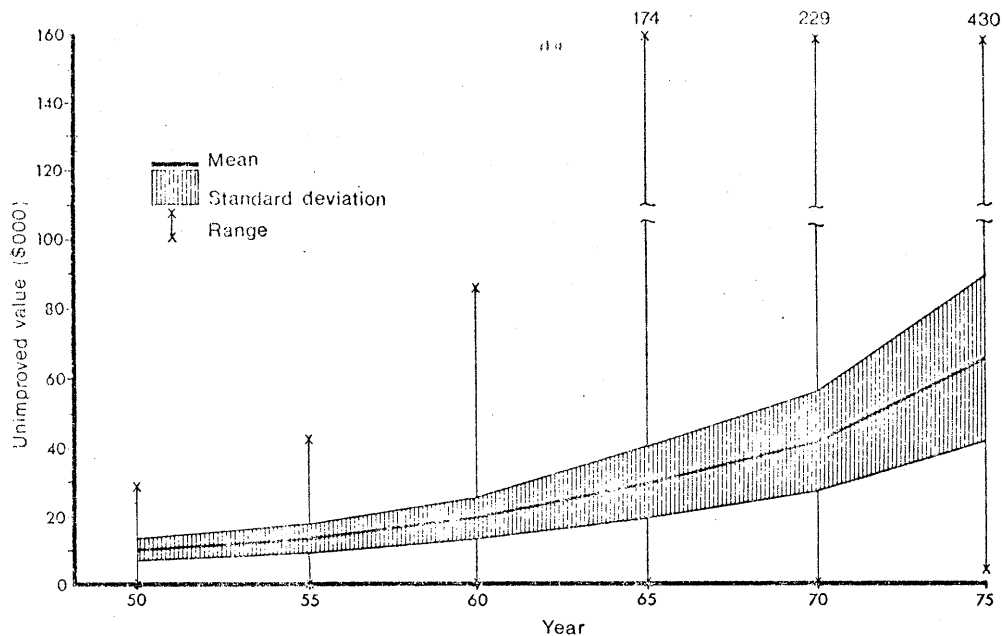
Details of historical changes in valuation of improvements and unimproved value/value of land exclusive of improvements, have been obtained for all pastoral leases. Estimates of recent values of land exclusive of improvements were specially provided by the Valuation Department for this study.

The changes both in actual and real terms in mean capital value and in mean unimproved value/value of land exclusive of improvements for pastoral leases over the period 1950-1976 are shown in Figures 4 and 5.



The mean, standard deviation and range of unimproved value at five-year intervals for all pastoral leases issued is shown in Figure 6.

FIGURE 6
RANGE IN UNIMPROVED VALUE
PASTORAL LEASES
1950 - 1975



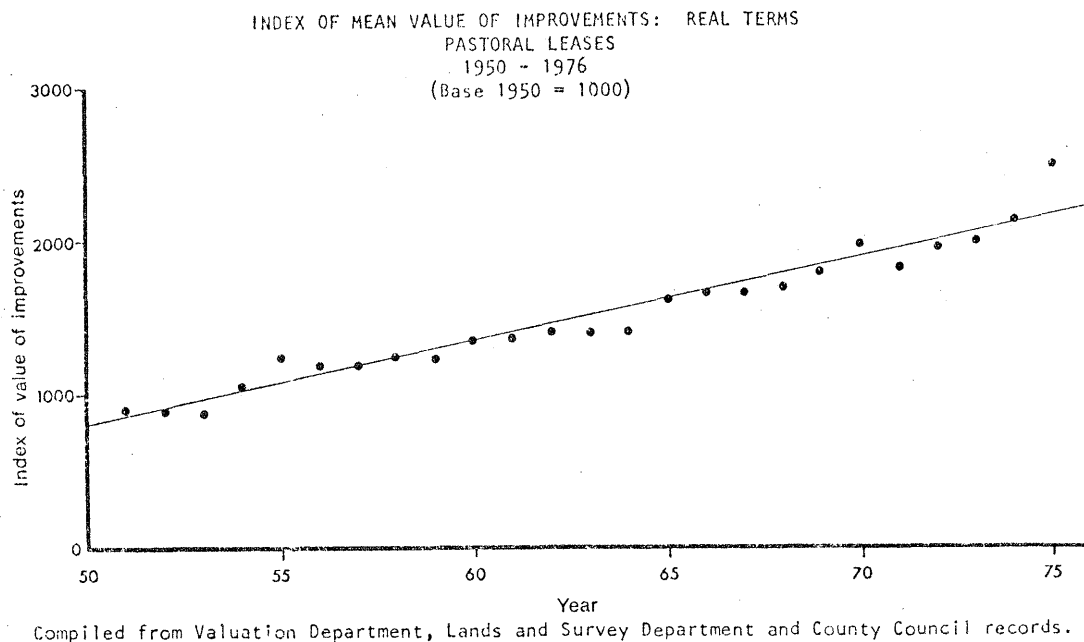
NOTE: Standard deviation is the range within which the unimproved value of two-thirds (300) pastoral leases fall.

From a regression analysis of the 1950-1976 unimproved values /value of land exclusive of improvements (LEI), it is estimated that, given a continuance of 1950-1976 trends, the mean LEI of pastoral leases will be approximately \$125,000 in 1983, the year in which valuations will be made for the first leases due for renewal.

INVESTMENT

Investment in hill and high country farming generally and in pastoral leases in particular can be approximately gauged from an examination of the changes in the real value of improvements of the period 1950-1976, as shown in Figure 7.

FIGURE 7



The compound rate of growth over 1950-1976 in real value of improvements on pastoral leases is 3.3 per cent per annum respectively.

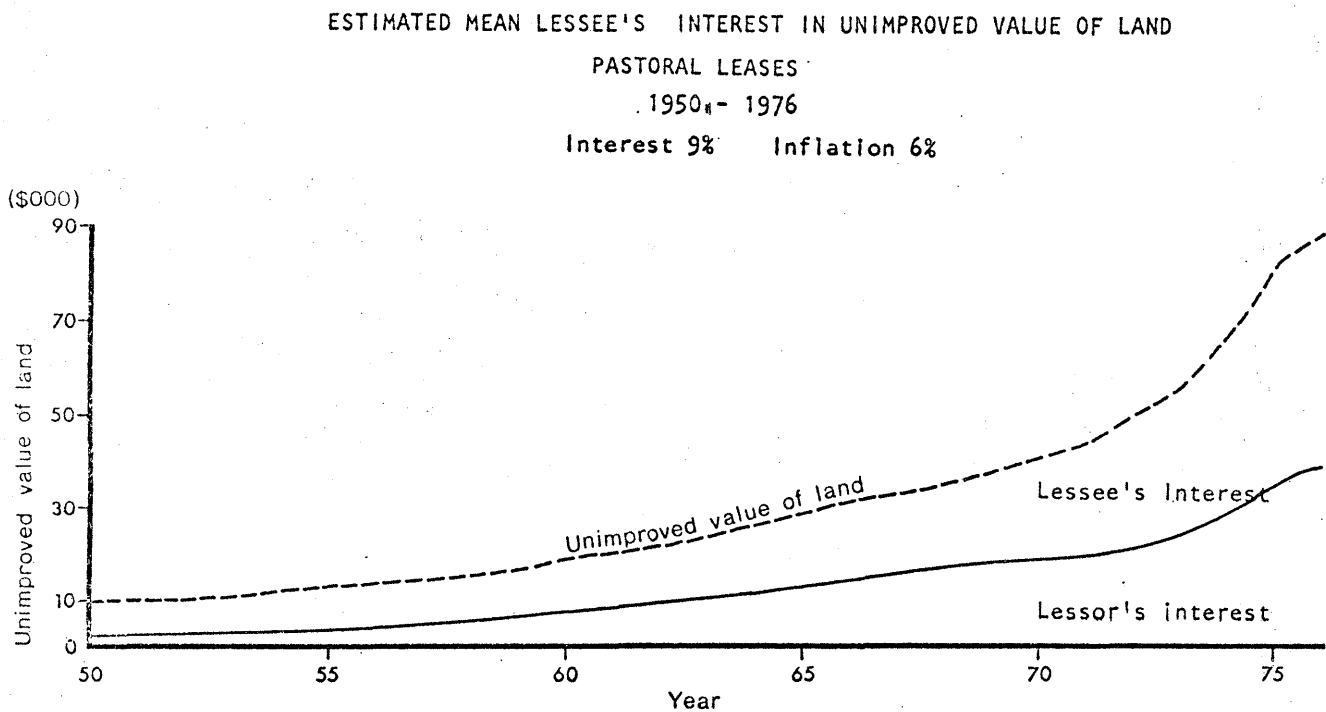
LESSEES INTEREST

The benefits (or disadvantages) of occupying land by way of a lease accrue to the lessee subject to restrictive or beneficial conditions applying to the lease and the payment of a series of payments which are the rent for the land leased. The lessee has all the benefits of freehold subject to future rent payments and any other condition applying to the lease.

The interest of pastoral lessees in the unimproved value over the period 1950-1976 has been calculated by establishing the sum of present value of the rent gain over the remaining term of the lease and for future renewals. An interest rate of 9 per cent and an inflation rate of 6 per cent were used to reflect average first mortgage interest rates and inflation from 1950-1976.

The results of these calculations are depicted in Figure 8.

FIGURE 8



LAND PRICES AND SOME RELATED INDICES

The value of land is clearly determined by factors related to:

- (a) the ability of land to meet the income, capital growth, and personal satisfaction objectives of man;
- (b) the scarcity of land generally and of a particular type of land sought by buyers; and
- (c) the purchasing power of those interested in acquiring land.

The market for land is a dynamic process reflecting the above characteristics of land as an economic good. A few land-price-related indices have been examined to observe their general relationship to the value of pastoral land.

The percentage compound increase from 1950-1976 in some land-related indices is given in Table 6.

TABLE 6

PERCENTAGE COMPOUND INCREASE IN SOME LAND-RELATED INDICES 1950 - 1976

Index	% Increase (Compound)					
	1950 - 1965		1965 - 1976		1950 - 1976	
	Actual	Real	Actual	Real	Actual	Real
Pastoral Land:						
CV	7.1	3.1	11.0	2.5	8.8	2.9
VI	7.2	3.1	12.2	3.5	9.3	3.3
UV/LEI	7.1	3.1	10.3	1.8	8.5	2.6
Rural Land:						
Freehold ^o	6.5	3.5	10.9	2.4	8.6	3.0
Grazing ^o	4.8	3.0	12.0	3.3	8.8	3.2
Wool Prices	0.3	-3.1	10.1	1.5	4.3	-1.2
Value of Farm production*	3.4	-0.5	12.1	3.4	7.0	1.2
Gross Domestic product	7.0	3.0	11.7	3.2	9.0	3.1
Money Supply	5.0	1.1	9.4	1.0	6.9	1.1
Consumer Prices	3.6	-	8.4	-	5.8	-

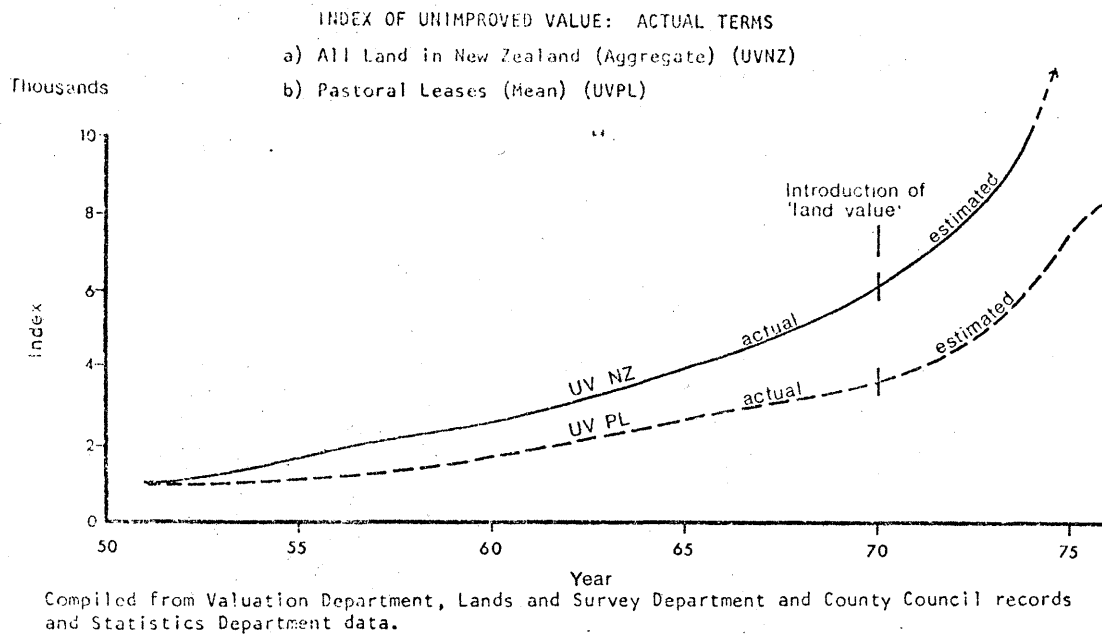
NOTE: * Sheep farms only

^o 1953 onwards

SOURCE: Valuation Department, Statistics Department, Reserve Bank

The change in actual terms index of aggregate unimproved value of all land in New Zealand and mean unimproved value of pastoral leases is shown in Figure 9.

FIGURE 9



The relationship between indices of mean unimproved value of pastoral land and gross domestic product, money supply and selected liquid assets, wool prices and the value of production from sheep farms is shown in Figures 10, 11 and 12.

FIGURE 10

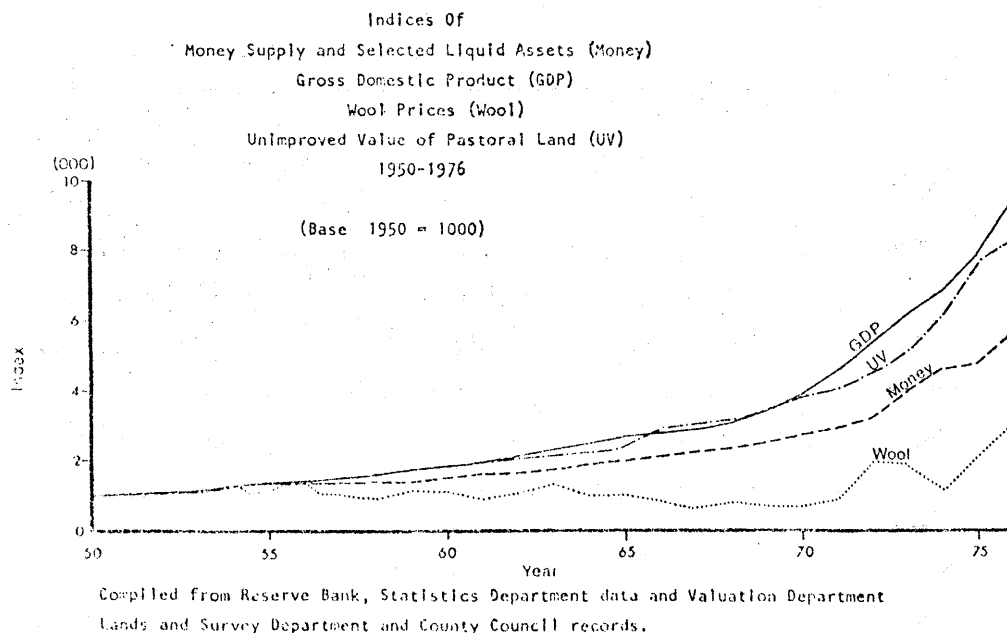
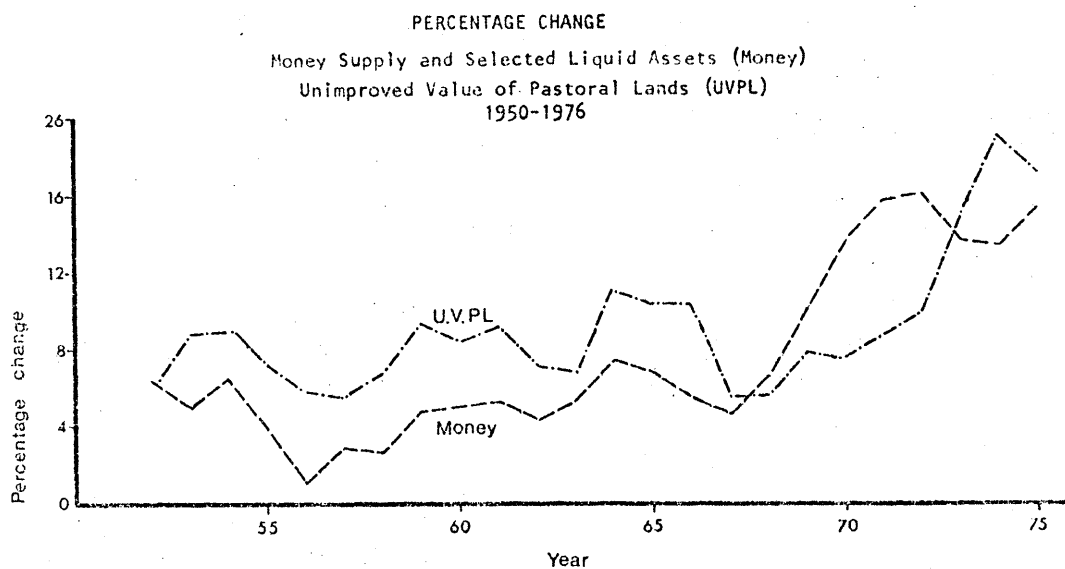
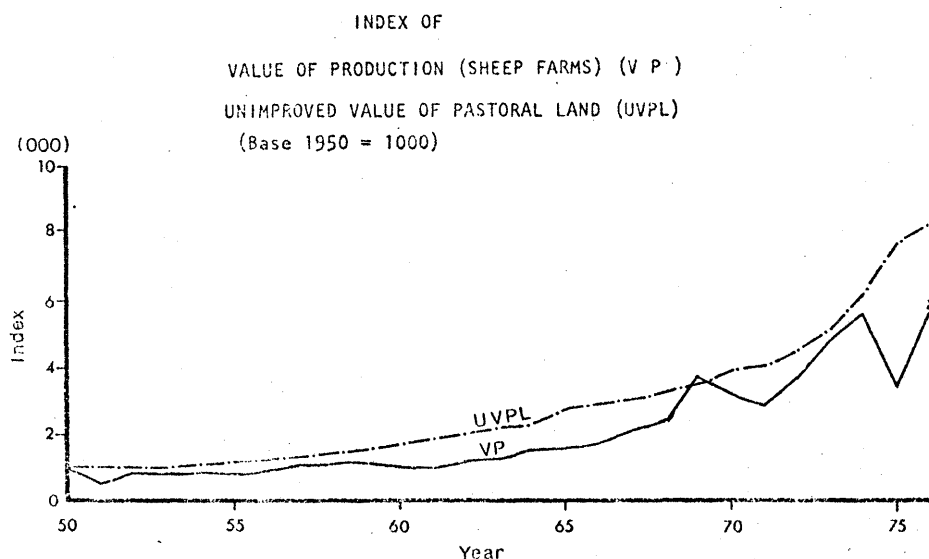


FIGURE 11



Compiled from Reserve Bank, Statistics Department, Valuation Department, Lands and Survey Department and County Council data.

FIGURE 12



Compiled from Statistics Department Data
(x) Provisional

The index of unimproved value of pastoral land in general follows that of the gross domestic product. The indices of the value of production from sheep farms and of money supply and selected liquid assets appear less directly related. Increases in the velocity of circulation of money supply account for the widening gap between the indices of money supply and unimproved value of pastoral land. A similar reasoning could apply to the differences between value of production and value of land.

When the percentage change in unimproved value of pastoral land is compared with that for money supply and selected liquid assets, it is clearly apparent that after a delay of one to two years unimproved values respond to changes in money supply.

THE NATURE OF RENT

ECONOMIC RENT

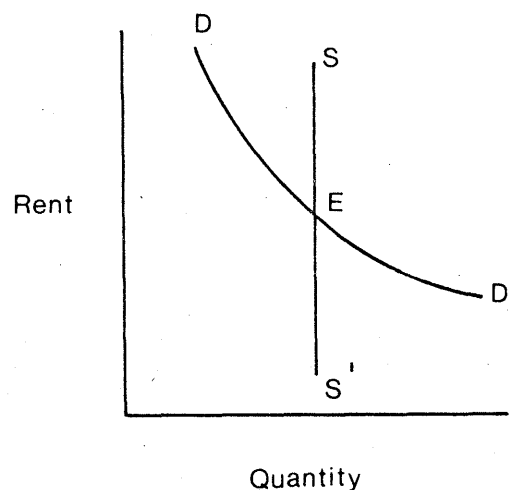
The term 'rent' is generally used to define the price paid per unit of time for the services of a durable good and, in particular, land and buildings.

'Economic rent' is a term used in economic theory to describe the surplus earned by a factor of production (e.g. land) over and above the minimum earnings necessary to keep it in employment (e.g. farmed).¹ Apart from any land tax or rates which may apply to the land exclusive of improvements, there are no payments required to keep it in production, hence virtually all earnings that arise from the unimproved land may be classed as economic rent.

Rent accrues to land because it is essentially fixed in area and is subject to a demand for its use in production (e.g. farming).² In Figure 13, D-D' represents the total demand for land and S-S' its generally fixed supply.

FIGURE 13

SUPPLY AND DEMAND FOR LAND



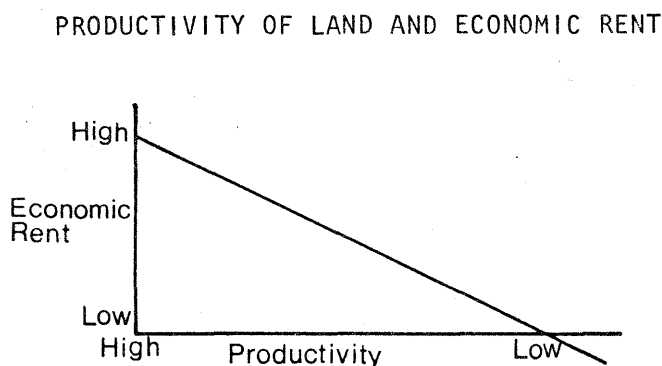
The intersect point E is the factor price for land and the point to which rents will tend, given a free market for land.³ If rents are above this point, some land owners would be unable to lease their land and would lower their rent to a point where they could arrange leases. Alternatively, if rents fell below the factor price (E), then rents would be bid up to satisfy demand. Should there be a rise or fall in the value of the product produced on the land the demand for the land will be reflected in higher or lower rents that will be paid for the land.

CAPACITY OF LAND TO EARN RENT

Land has a capacity to earn an economic rent according to its use capability. Normally, land of high fertility produces more from the same inputs than does land of low fertility and thus is capable of earning a higher economic rent.⁴ Separate areas of land of similar productive capacity with differing distances from markets, or otherwise subject to differing conditions of use, have differing capacities to earn an economic rent. The extent of this difference reflects the economic disadvantage to which one area of land is placed in respect to another.

The relationship between productivity of land and economic rent is illustrated by Figure 14 below.

FIGURE 14



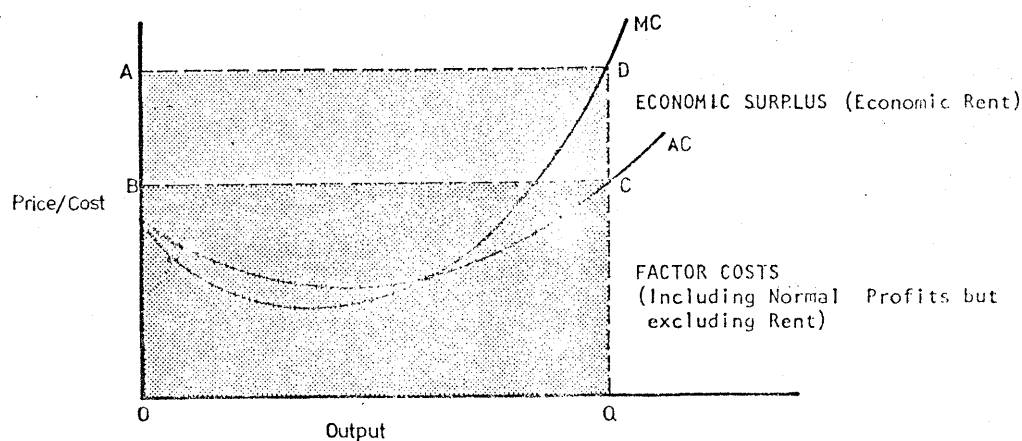
Land, such as that classified as pastoral land, is by its very nature incapable of earning an economic rent to the same extent as can, for example, high quality arable land. Unless the special characteristics of pastoral land can be utilized for high value production (or conservation), then the economic rent that will be earned by it will be lower than, say, arable land.⁵

FARM RENT

Figure 15 illustrates possible cost curves of a farm. The cost curves represent the average cost (AC) and the marginal cost (MC) per unit of output from the farm. The cost curves exclude payments for land (i.e. excluding rent), but include normal profits to management and to capital employed on the land. Each farm (or pastoral lease) will have unique average and marginal cost curves.

FIGURE 15

AVERAGE & MARGINAL COST CURVES OF FARM



In a situation of perfect competition (i.e. the farmer cannot influence prices), the farm will maximise profits at output Q (receiving prices OA) where the marginal cost of production per unit of output equals the price received per unit of output (i.e. $MC = OA$). At point Q the total revenue received by the farm is $OADQ$ (Q units of output at price of A), the factor costs (including normal profits but excluding rent) amount to $OBCQ$ and the economic surplus (or economic rent) is $BADC$.

THE RESOURCE ALLOCATION FUNCTION OF RENT

In a situation where rent is set at less than economic rent ($BFGC = BAKL$ in Figure 16), there is the possibility of an inefficient utilisation of the land resource. This is so because the tenant is not obliged (though it is nevertheless rational to do so) to increase production to point Q to make normal profits because they may be achieved at point M . Surplus profits ($FADG$) are able to be achieved by maximising profit at output Q .

OTHER TENURES

Other than pastoral leases the only other leases with rights of renewal on 'pastoral land' are Crown renewable leases and some public body leases. Crown renewable leases, of which few only apply to land normally classified by the Land Settlement Board as pastoral land, have an annual ground rent of $4\frac{1}{2}$ per cent at eleven year reviews and a right of acquisition of freehold. Eight university endowment leases in Otago are administered as pastoral leases by the Department of Lands and Survey for the University of Otago. The University of Canterbury leases without right of lessees to freehold seven properties on 'pastoral land' at an annual rental of three per cent. County leases of 'pastoral land' are few in number (7), and confined to small areas (average 277 ha) of land previously reserved for forestry. Rentals for some county leases are at five per cent of value of land exclusive of improvements, reviewed at five year intervals.

particular (Figure 4, page 20). This has occurred in spite of a prospect of substantial increases in rents. The evidence is that the present and future rents have been heavily discounted to the extent that some leases have sold at close to freehold prices. Whether the advent of eleven year rent reviews will substantially affect sale prices of Crown leases is a matter of conjecture, but economic common sense suggests that this should have a steadying effect on future sale price increases.

RIGHT OF FREEHOLD

Because pastoral lessees are unable to freehold their leases they may be considered to be at a disadvantage when compared with some other Crown lessees. This disadvantage principally arises from the absence of equity in the unimproved land and the resulting escalation of rent with land prices.

A Crown lessee's right to acquire a freehold tenure will generally have an extra value in addition to the present lessee's interest in the land leased. In times of rapid escalation in land values and comparatively low interest rates this right to freehold tenure is relatively high. Since 1950 when the pastoral lease tenure came into being there has been a yearly 2.6 per cent compound growth in real rental values. Because rents for pastoral leases have hitherto been set without regard to changes in rental value and with long periods between reviews of rent, there has been a growth in lessees' interest in the land (Figure 8, page 23). The growth in lessees' interest has allowed lessees the benefit of a capital gain in a large proportion of the rental values of land. Because of this 'indexing' of the lessees' interest to real growth in rental value the value to pastoral lessees of a right to freehold has been comparatively low when compared with lessees of 'farm land'.

With the prospect of a valuation based rental system with shorter periods between reviews of rent and continued escalation in land prices, the value of a right to freehold is markedly increased. The notional value of this right to the individual pastoral lessee is dependant on the alternative investment opportunities open to the lessee with available funds. Such investments need to produce in real terms net of tax, an annual yield of at least 2.6 per cent compound, to be better than notionally freeholding pastoral land (Table 5, page 11).

practice this power has been abated by the effect of inflation in reducing the real amount of rent payable, the possibilities of remission of rent in periods of adversity and the number of absentee lessees of pastoral land. In spite of this abatement the security held by the Crown is considerable though currently substantially less remunerative than a comparable first mortgage security on land, even though the renewal is 'indexed' against inflation.

The term 'fair annual rent', where there is a perpetual right of renewal, has been variously defined by Statute and by the Courts to mean an equitable rent, being that which a reasonable tenant might be prepared to pay having regard to the conditions of the lease.¹²

The rent payable for pastoral land as a percentage of the unimproved value of the land needs to account for the particular conditions of the lease. Clearly the principal factors to be considered are the period between reviews of rent, the absence of rights to the fee simple and ground rents paid for similar land elsewhere.

REVIEWS OF RENT

Long periods between reviews of rent are to the advantage of the lessee, who may capitalise on the 'goodwill' in the unexpired term of the lease. This is so because the lessee discounts (at his own time preference rate) the future increase in rent due at the end of the period between rent reviews. Conversely, to overcome this disadvantage, the lessor will attempt to compound in loss of rental revenues and add it on to the rental rate at rent review time. In an inflationary period any lease which provides for rent reviews at long intervals, such as has been the case with the pastoral lease thus far, inevitably leads to the development of a disparity between rent paid for the lease and the current rental value. In the interests of lessee and lessor, regular rent reviews are necessary. Ideally, in an inflationary period such reviews should be annual. Practical considerations of administration, valuation and arbitration in setting rents for pastoral leases make five years the most appropriate minimum. The Land Act 1948 prescribes 11 year reviews of rent for pastoral leases.¹³

In the over-all demand for farm land there has been, over recent years, a remarkable growth in sale prices of Crown leases and in pastoral leases in

Because of the effects of inflation there is a substantial advantage to the lessee of a pastoral lease in a long (11 year) period between reviews of rent. A substantial lessee's interest (in part recognised by the Crown)¹¹ accrues to the lessee for the unexpired term of the lease. Depending on whether or not the rent for the lease reflects the value of the land rights leased, there may or may not be a lessee's interest in the lease at the time of renewal.

The rights to pasturage only confer no apparent rights to the pastoral lessee to carry out any other business on the land. In performing the covenant of the lease the lessee is obliged to fulfil the duty created by it. Any business other than carrying out pastoral farming would in fact be in breach of the covenant to carry out pastoral farming only and any lessee so doing could risk action for forfeiture unless the terms and conditions of the lease were varied by the Crown.

Any right to acquire the fee simple in leasehold land is valuable, particularly when the rent for the land reflects the factor price for the unimproved land. In a situation of concessional rent the freeholding right is proportionally less valuable. The effect of the absence of a right to acquire the fee simple (or other increases in property rights) on the rents payable by a prudent pastoral lessee depend on what the costs of acquisition of fee simple are for similar land.

Prudent utilisation of 'pastoral land' for pastoral purposes dictates adherence to all of the conditions in pastoral leases relating to good husbandry. No significant long term commercial disadvantage to any lessee is normally recognised in the 'good husbandry' clauses of pastoral leases.

The institutional restraints on the use of 'pastoral land' for other than pastoral purposes may result in inefficient utilisation of a large land resource. Such inefficiencies are likely to arise only when more productive use of the land is restrained institutionally or through restrained imaginative entrepreneurial development.

The theoretical power of distress that the Crown has over its pastoral tenants is considerable. This power is based on requirements for the lessee to observe the conditions of the lease including residence, payment of rent and rates. In

The average 1920 - 1978 rates of interest on mortgages are 5.8 per cent and rates of inflation 3.8 per cent, giving a net yield of two per cent.

In periods of low inflation, first mortgage interest rates have tended to yield about three per cent in real terms. In periods of high inflation it is clear that investments in mortgages are earning, in real terms, a negative yield. Without either annually adjusting the value of mortgages to real terms or regularly reviewing interest rates to ensure a positive two to three per cent real terms yield, it is unlikely that national lenders of funds will make them available for mortgages.

Provided there are regular reviews of rental rates, lessors are normally protected against the effects of inflation. Provided also there are minimal costs of administration of leases, it could be concluded that a lease with an annual rent yielding three per cent is at least a comparable and often a significantly better investment than first mortgage investments that are secured against the effect of inflation.

LEGAL CONSIDERATIONS

The following factors relevant to pastoral leases have, in legal judgements, been held to govern lessor-lessee relationships:

- (a) What a prudent lessee would pay for the lease having regard for all the terms and conditions of the lease and not what the prudent lessor would consider he ought to get.⁸
- (b) A ground rent secured by a power of distress is regarded as one of the highest forms of security.⁹
- (c) The terms of the lease must be considered in establishing a 'fair annual rent' as a percentage of unimproved value.¹⁰

The terms and conditions of pastoral leases which appear to affect what a prudent lessee would pay for the lease are:

- the period between reviews of rent (hitherto 33 years, henceforth 11 years);
- rights to 'pasturage' only with no rights to the 'soil'; and
- the restraints on husbandry covenanted in the lease.

Table 7 shows rates of mortgage interest and rates of inflation for periods of 'high' (greater than five per cent) inflation (1950 - 1952 and 1967 - 1976). The concessional interest rates (three per cent or less) are separately identified.

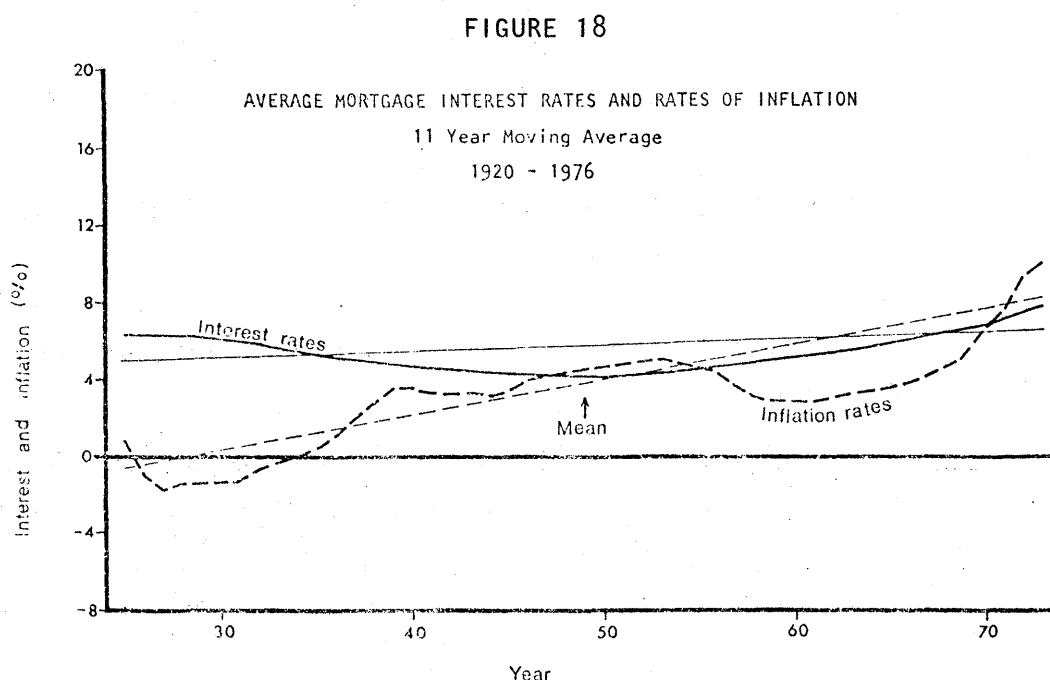
TABLE 7
AVERAGE RATES OF MORTGAGE INTEREST AND RATES OF INFLATION
1950 - 1976

	Inflation	Mortgage Interest Rates		
		Average	Excl. to 3%	Excl. Govn't
1950 - 1976	5.8	5.8	6.0	*
1953 - 1967	3.0	5.2	5.5	*
1967 - 1976	9.0	7.1	7.2	7.6

NOTE: * Not available.

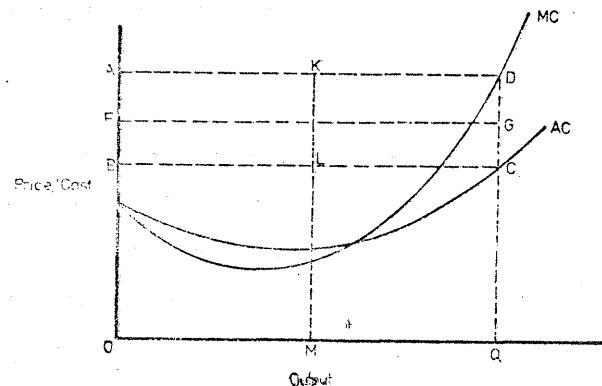
It is evident that in periods of comparatively low inflation since 1950 the net yield from mortgage investments was on average 2.5 per cent. Exclusion of government agency mortgages increases average interest rates by approximately 0.4 per cent.

The average mortgage interest rates and rates of inflation over the long term (1920 - 1978) are shown as eleven year moving average in Figure 18 below.



Compiled from Reserve Bank and Statistics Department Data

FIGURE 16
RENT AT LESS THAN ECONOMIC RENT



Conversely, should rent be set at more than economic rent, it becomes impracticable for the farm to remain in business and still attain normal profits to capital and management.

The farm which produces to point Q is able to make payments for all factor costs including those for land (rent), capital and management (normal profits).

To maximise profit a landlord would aim to set rent at the true economic rent. Any farm producing less than the economic rent would have to increase output to remain in business because at any lower output it would incur a loss.⁶

In setting a true economic rent the landlord is forcing efficient allocation of the land resources being leased.

If rent is set at less than economic rent it is probable that any rental advantage held by the lessee will be capitalised in the form of 'goodwill' which will effect an increase in the market value of the asset leased. Should rent be set at a level in excess of the economic rent of an enterprise then inevitably there will be a fall in the market value of the lease until an incoming lessee is able to earn an economic rent and acceptable returns to capital and management.

RISK

The Land Settlement Board in classifying land 'as being suitable or adaptable only for pastoral purposes' is by implication recognising the higher physical risks of asset deterioration to which such land is subject when comparing it with its farm, urban or commercial counterpart.

Part of the lessor's risk is covered by the covenants in the lease which are intended to ensure conservation of the land resource. The remaining risks are

not related to the lessee's actions and do not affect the determination of rent.

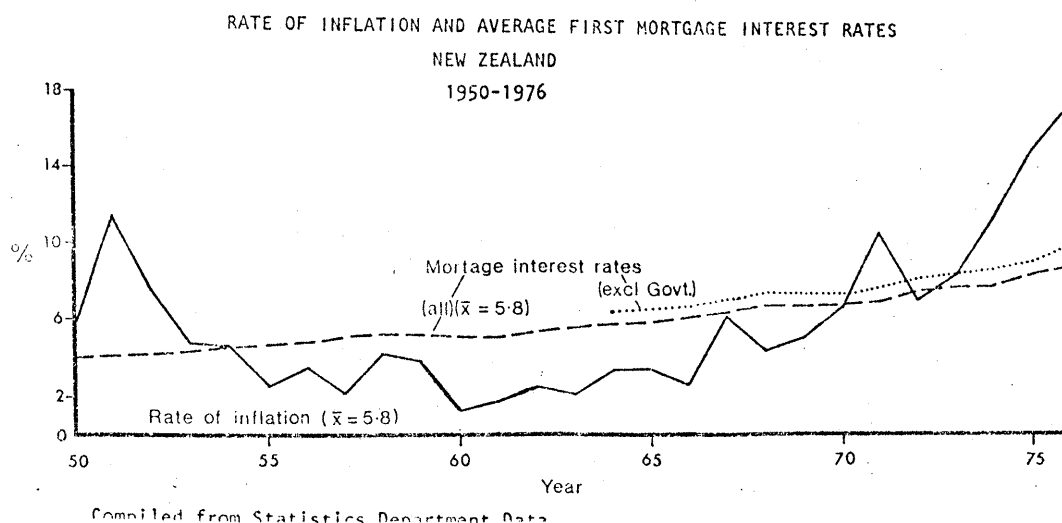
The physical risk to which the lessee's improvements are subject, together with the economic risks (snowstorms, product price variations, etc.) associated with farming of pastoral land, increase the normal profits required by the lessee as a return for factor inputs. The risks incurred decrease the economic surplus of the farm and consequently decrease its rental value and thus total rent payable. Through expenditure by various agencies of government on research and extension, development of community services, provision of loans, grants and subsidies, the Crown appears to be accepting a substantial part of the lessee's risks.

Bearing in mind that the lessor's (Crown) interest is secured against the effects of inflation, it would appear that the alternative investments having an equivalent risk to that moderate risk implicit in a pastoral lease would approximate those in the first mortgage market, adjusted for the effects of inflation, the (currently long) periods between reviews of rents, and the relative illiquidity of the Crown's investment in the land.

INTEREST AND INFLATION

Examination of 1950 - 1976 rates of interest and inflation (Figure 17 below) shows a parity between inflation and interest. Recent trends clearly show a negative yield in mortgages even if the government sector lendings are excluded.

FIGURE 17



THE ECONOMICS OF HILL AND HIGH COUNTRY FARMING

PRODUCTION

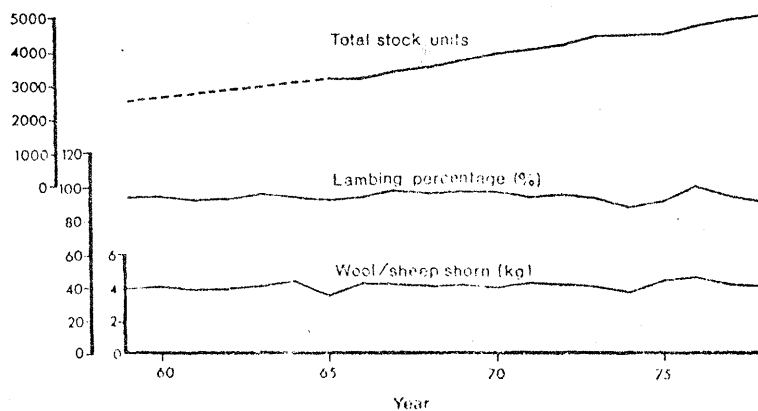
The change in mean total stock units, lambing percentage and in wool production per sheep for South Island hill and high country farms since 1959, as reflected in N.Z. Meat and Wool Boards' Economic Service Sheep and Beef Farm Survey¹, is shown in Figures 19 and 20.

FIGURE 19

MEAN TOTAL STOCK UNITS, LAMBING PERCENTAGE AND WOOL CLIP PER SHEEP SHORN

SOUTH ISLAND HILL COUNTRY

1959-1978



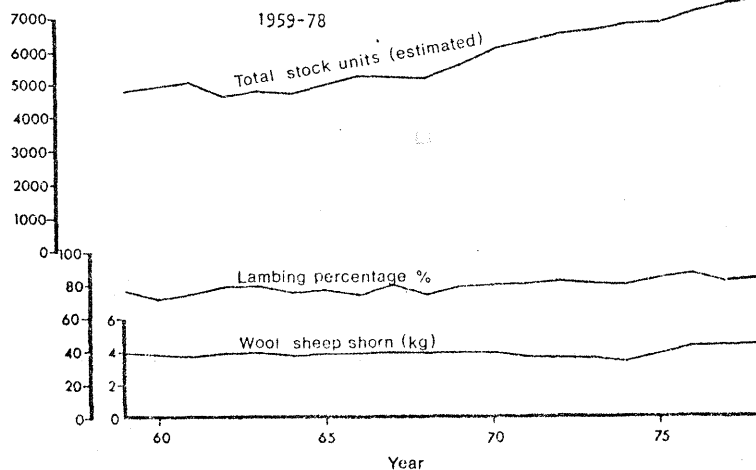
Compiled from N.Z. Meat and Wool Boards' Economic Service Data

FIGURE 20

MEAN TOTAL STOCK UNITS, LAMBING PERCENTAGES AND WOOL CLIP PER SHEEP SHORN

SOUTH ISLAND HIGH COUNTRY

1959-78



Compiled from N.Z. Meat and Wool Boards' Economic Service Data

Contrary to the national average for sheep and beef farms, both groups of farms have increased stock units substantially (hill +104 per cent, high +56 per cent) and have maintained stock performance.

INCOME AND EXPENDITURE

The mean gross income and expenditure per stock unit in real terms of South Island hill and high country farms over the period 1959-1977 is shown in Figures 21 and 22. The graphs are derived from N.Z. Meat and Wool Boards' Economic Service data² and are expressed in real terms calculated from a combined consumer prices and farm input prices index.³

FIGURE 21

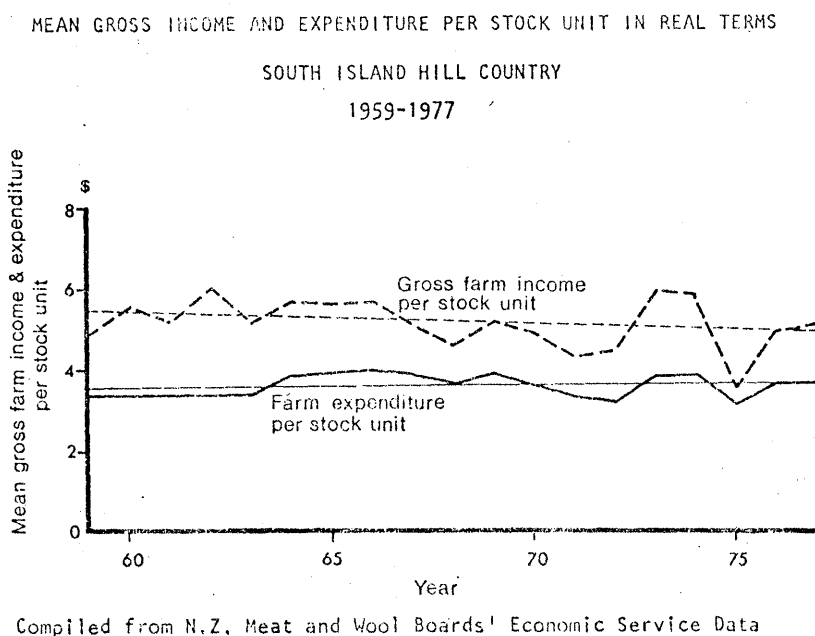
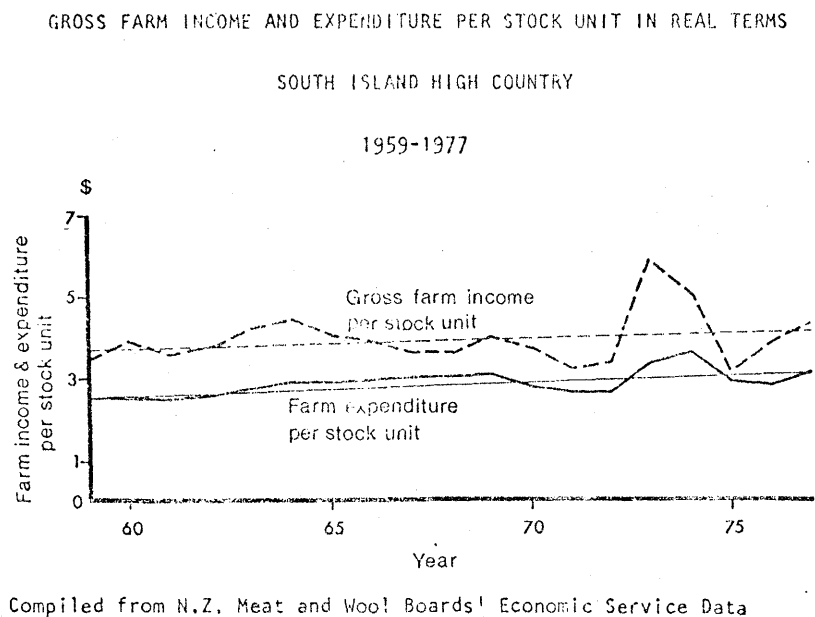


FIGURE 22

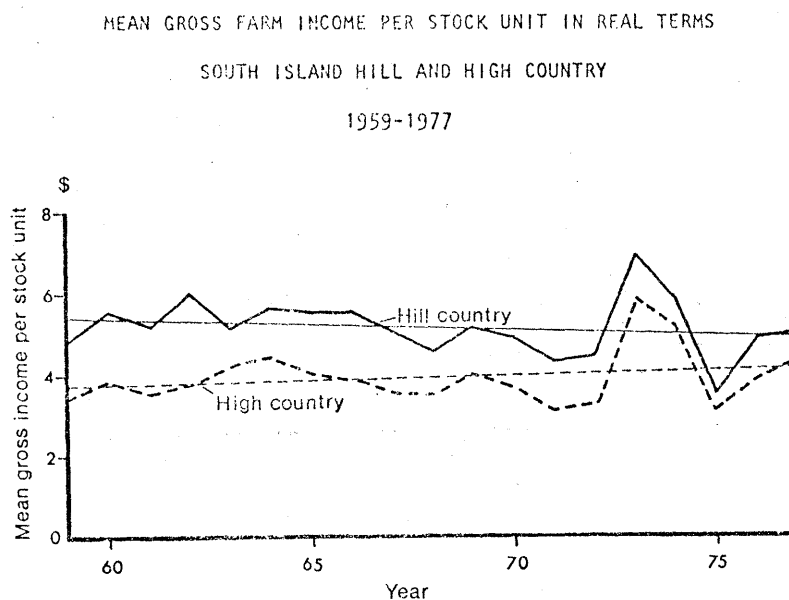


The narrowing of margins per stock unit for both hill and high country farmers, as the real terms return per stock unit has declined with increasingly less favourable terms of trade, is clearly demonstrated.

Following the Korean war boom of 1950, real gross incomes per stock unit remained relatively constant until 1972, the start of the unsettled financial conditions which have prevailed since.

Since 1959, gross farm income per stock unit of hill country properties has consistently exceeded that of high country properties (Figure 23). The overall differences in returns to livestock clearly reflect the more benign conditions for livestock production in hill country farming. There is an apparent trend towards parity of gross income per stock unit for both groups of farms.

FIGURE 23

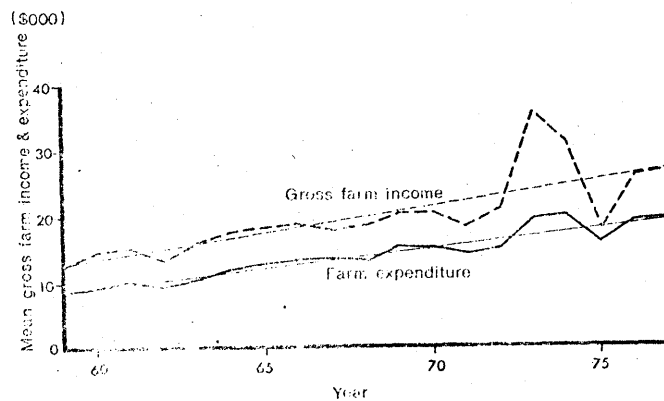


Compiled from N.Z. Meat and Wool Boards' Economic Service

Changes in real terms mean gross farm income, farm expenditure and net farm income since 1959 are shown in Figures 24 and 25.

FIGURE 24

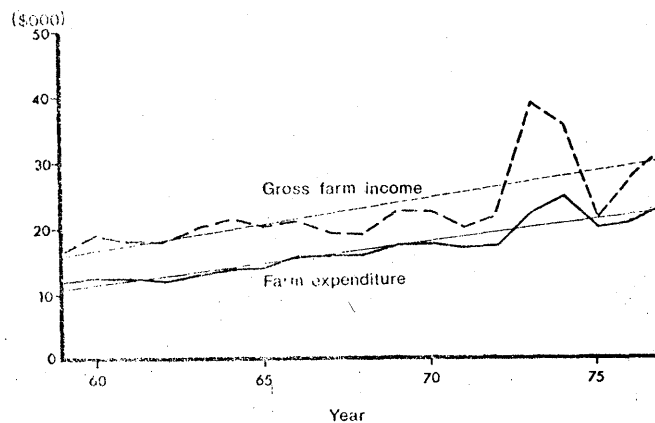
MEAN GROSS INCOME AND EXPENDITURE IN REAL TERMS
SOUTH ISLAND HILL COUNTRY
1959-1977



Compiled from N.Z. Meat and Wool Boards' Economic Service Data

FIGURE 25

GROSS FARM INCOME AND EXPENDITURE (ADJUSTED) IN REAL TERMS
SOUTH ISLAND HIGH COUNTRY
1959-1977

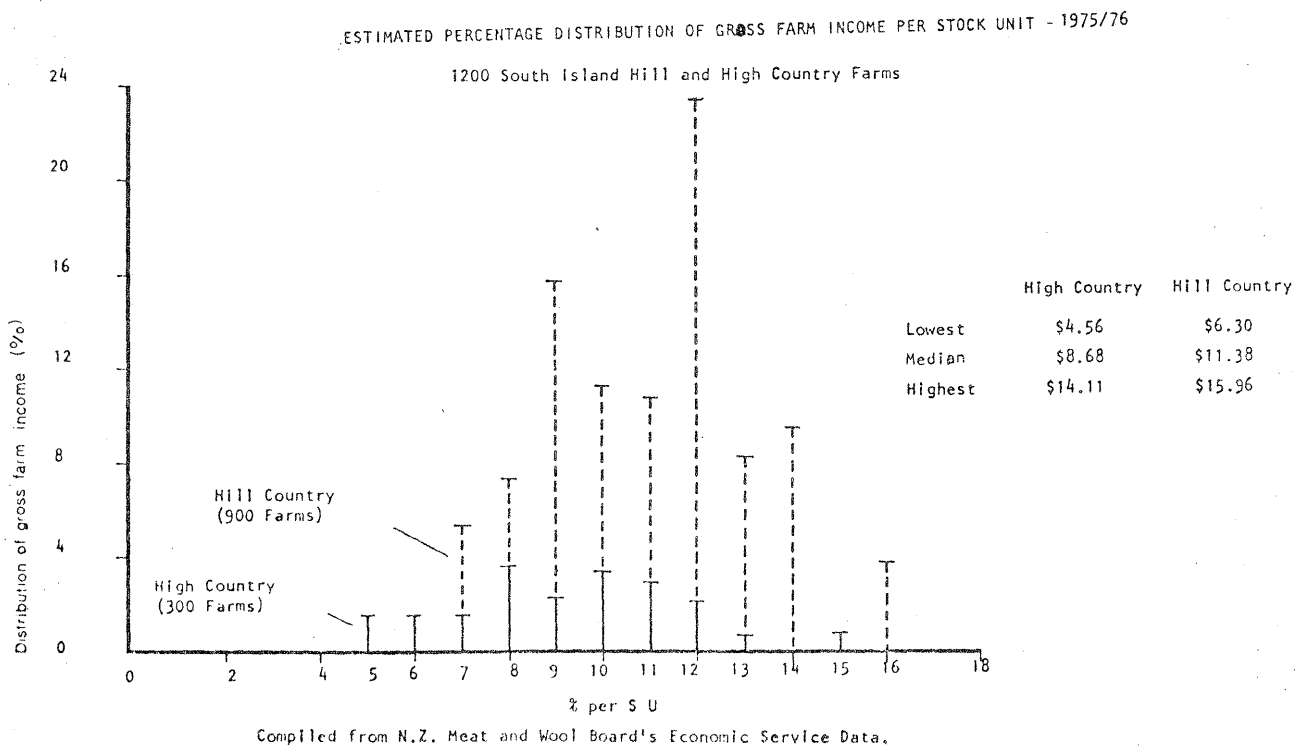


Compiled from N.Z. Meat and Wool Boards' (adjusted) data

Principally because hill and high country farmers have increased stocking by approximately 104 per cent and 56 per cent respectively, and high country farmers have increased margins per stock unit, mean net farm incomes in real terms of both groups of farmers have doubled since 1959.

The large differences in natural and developed resources of, and management skills applied to, pastoral farms generally, are reflected in the wide distribution in gross farm income per stock unit on hill and high country farms. Figure 26, which follows, demonstrates the distribution in gross farm income per stock unit in 1975/76 season for 71 hill and high country farms.⁴ The 26 per cent advantage held by hill country farms over their high country counterpart is further emphasised by the three-fold advantage of the highest revenue producer over the lowest. Such wide variation indicates major differences in livestock performance between farms within the region. This observation is confirmed by analysis of a series of high country production surveys by Tussock Grasslands and Mountain Lands Institute.⁵

FIGURE 26



The effect of this variation in stock performance on gross and net farm income is further illustrated by a comparison of two performance groups ('high' and 'low'), each within separate samples of hill and high country farms (Table 8).

TABLE 8

EFFECT OF STOCK PERFORMANCE ON FINANCIAL PERFORMANCE

South Island Hill and High Country

1975/76

	Hill Country Performance		High Country Performance	
	'Low'	'High'	'Low'	'High'
Physical:				
Stock units/ha	2.1	3.8	0.7	0.8
Lambing (%)	94.5	104.7	78.0	94.7
Calving (%)	82.4	85.3	77.4	82.3
Wool (kg/hd)	4.2	4.8	3.9	4.5
Financial:				
Gross income/su (\$)	9.8	12.8	7.1	10.4
Gross income/ha (\$)	20.8	48.7	5.1	8.7
Expenditure/ha (\$)	15.6	35.1	3.7	6.5
Net/ha (\$)	5.2	13.6	1.4	2.2
Return on capital (%)	3.6	4.8	-1.3	0.2

SOURCE: N.W. Taylor (Meat and Wool Boards' Economic Service) pers. comm.

RETURN ON CAPITAL

Table 9 lists the rate of return on total farm capital used by hill and high country farms for the season 1976/77.⁷

TABLE 9

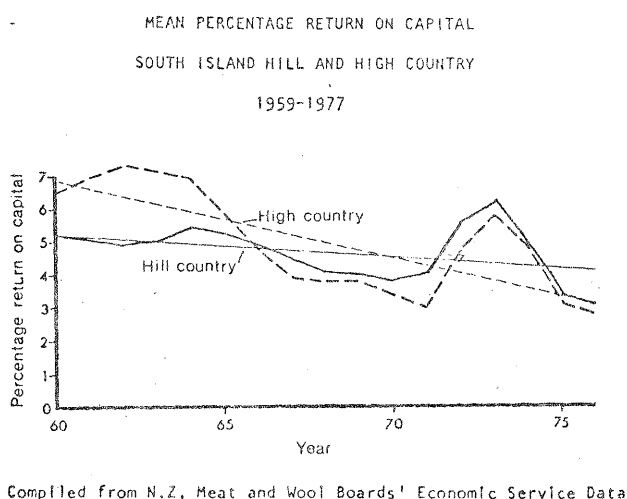
MEASURE OF ECONOMIC PROFITABILITY S.I. HILL AND HIGH COUNTRY FARMS 1976/77

	Hill Country		High Country		Average	
	Total	Per s.u.	Total	Per s.u.	Total	Per s.u.
	\$	\$	\$	\$	\$	\$
Total Farm Capital	415,299	78.30	483,477	64.98	445,826	71.22
Economic Farm Surplus	16,818	3.17	20,867	2.80	18,631	2.98
Rate of Return	4.0%	-	4.3%	-	4.2%	-

NOTE: Economic Farm Surplus is net farm income plus managerial salaries, interest and rent paid, less assessed managerial reward.

The changes in percentage return on total farm capital for both hill and high country farms since 1959 is shown in Figure 27.

FIGURE 27



The mean return on capital from 1959-77 for hill country farms is five per cent and for high country farms 4.6 per cent.

Because farm expenditure data invariably includes inextricable items of new investment, the calculated returns appear likely to underestimate returns by at least one per cent of 'status quo' situation. The rate of real increase in pastoral land values recorded in this publication would suggest a level of investment of at least three per cent per annum. Conversely, real depreciation cost of plant and buildings is rarely adequately accounted for.

CASH EQUIVALENT RETURN

As a reflection of the overall return on investment, a cash equivalent return from hill and high country farming has been calculated by adding the inflation in land values (tax free) to economic farm surplus net of income paid. This, for 1976/77, a year when inflation in land was less than inflation in consumer prices, is shown in Table 10.

TABLE 10

TAX PAID CASH EQUIVALENT RETURN

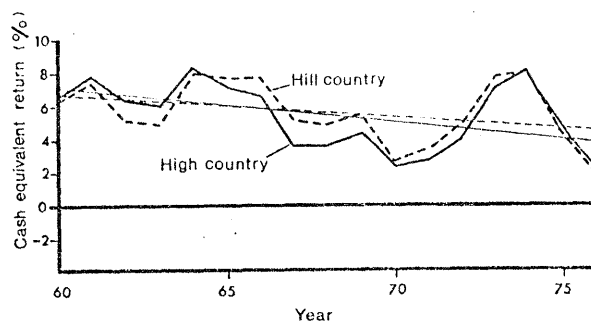
HILL AND HIGH COUNTRY FARMING 1976/77

	Hill Country		High Country		Average	
	\$	%	\$	%	\$	%
Change in Land Value	-17,637	-6.9	-19,983	-6.9	-18,687	-6.9
Tax Paid Income	12,128	-	14,863	-	13,341	-
Cash Equivalent Return	-5,509	-1.3	-5,120	-1.1	-5,346	-1.2

Three year moving average changes in cash equivalent return 1959 - 1977 for both hill and high country farming is represented by Figure 28 below.

FIGURE 28

CASH EQUIVALENT RETURN (%)
SOUTH ISLAND HILL AND HIGH COUNTRY
1959-1977
THREE YEAR MOVING AVERAGE



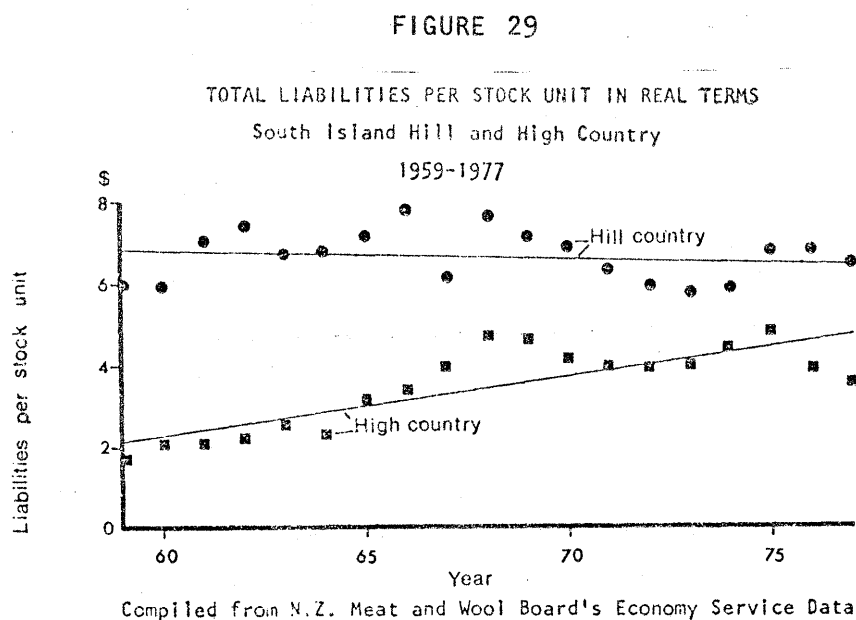
Compiled from N.Z. Meat and Wool Boards' Economic Service Data

The 1959 - 1977 average tax paid cash equivalent return for hill and high country farms is 5.2 per cent and five per cent respectively.

Whilst there is a comparatively low rate of return on the total farm capital employed, there is, however, a significant tax paid cash equivalent return from hill and high country farming. The cash equivalent returns are largely indexed against inflation and compare favourably with yields from most low - moderate risk investments available in New Zealand.

LIABILITIES, EQUITY AND LIQUIDITY

As illustrated below (Figure 29), the real terms total liabilities per stock unit over the period 1959 - 1977 has remained fairly constant for hill country farms, but has almost doubled on high country properties in spite of lower margins per stock unit. Total liabilities per stock unit of hill country properties remains, never-the-less, significantly higher than high country properties.



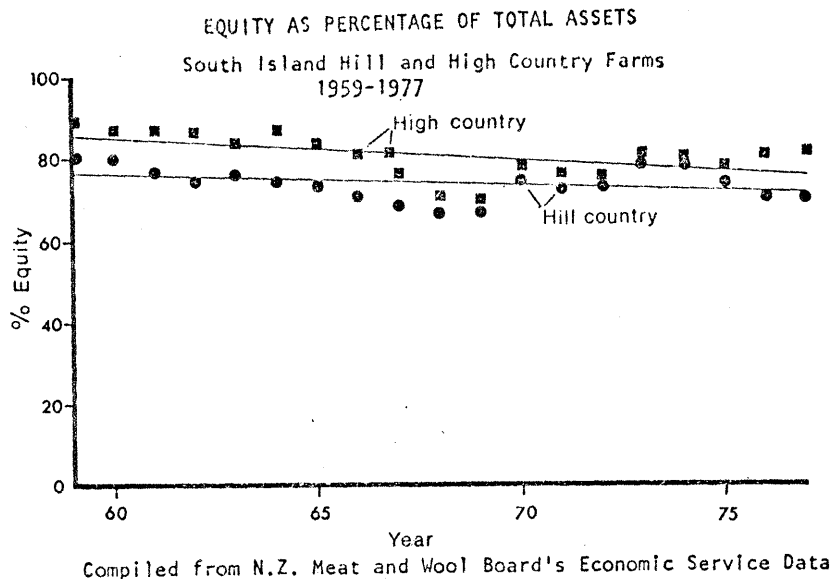
Total liabilities per farm have increased at a substantially faster rate per farm on high country properties than on hill country.

The extent of increased real terms total farm capital in hill and high country farming enterprises can be gauged from the real terms 1950 - 1976 increase in capital values of land (the greatest component of total farm capital) for pastoral leases (Figure 5, page 20). The real terms compound annual growth from 1950 - 1976 was 2.9 per cent (see Table 6, page 24).

Increased borrowing by hill and high country farmers (Figure 29 above) against

an increasing asset (land, stock and plant) has been carried out with comparatively little change in percentage farmer equity in total farm capital (Figure 30 below).

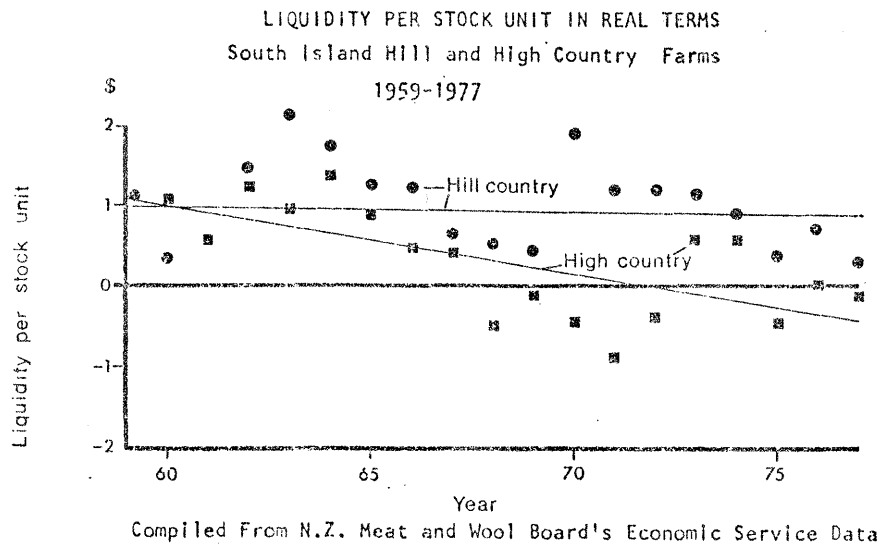
FIGURE 30



While maintaining equity in their enterprises at about 80 per cent, hill and high country farmers have earned an approximate real terms growth in equity (net worth per farm) of 41 per cent and 70 per cent respectively over the period 1959 - 1977.

The effect of narrowing margins per stock unit on liquidity (cash in bank plus other liquid assets, less current account balances) per stock unit, is illustrated in Figure 31. The lower and reducing margins per stock unit without compensating increases in total production has caused a steady trend towards a loss in liquidity for high country properties. Conversely, hill country properties have maintained liquidity largely by substantial increases in production.

FIGURE 31



ECONOMIC RENT

'Economic rent' of land is the surplus earned by the land after all the factors of production have been paid for⁸ (see page 28). The economic farm surplus of a property can be regarded as the economic rent of the unimproved land, plus costs of the capital employed therewith in farming the land. It is implied that the true economic rent is earned by the land at a point of maximum profitability (i.e. maximum economic efficiency). The following calculations (Table 11) are an attempt to establish the approximate economic rent earned by the unimproved land occupied by South Island hill and high country farms. From analysis data on unimproved value of pastoral leases and from Valuation Department statistics it is estimated that from 1959 - 1977 the average unimproved value as a proportion of capital value of land is approximately 60 per cent.

TABLE 11

APPROXIMATE ECONOMIC RENT TO UNIMPROVED LAND

HILL AND HIGH COUNTRY FARMS 1976/77

Land	Hill Country	High Country	Average
Value of Improvements	\$117,006	\$135,093	\$125,104
Rental Value (unimproved value)	175,508	202,640	187,657
Capital Value	292,514	337,733	312,761
Capital Employed on Land			
Improvements	117,006	135,093	125,104
Stock	85,711	103,638	93,738
Plant	13,352	13,910	13,602
Working	37,354	46,282	41,352
Total	253,432	298,923	273,796
Annual Costs of Capital Employed			
Improvements (3% net)*	3,510	4,053	3,753
Stock (5% net)*	4,286	5,183	4,687
Plant (7% net)*	935	974	952
Working (3% net)*	1,121	1,388	1,241
Total	9,852	11,597	10,633
Economic Rent			
Economic Farm Surplus	16,818	20,867	18,631
Less Annual Costs of Capital	9,852	11,597	10,633
Economic Rent	6,966	9,270	7,998
% Rental Value of Land	4.0%	4.6%	4.3%

NOTE: * Annual real costs of capital are long term interest rates less the long term average rate of inflation (six per cent).

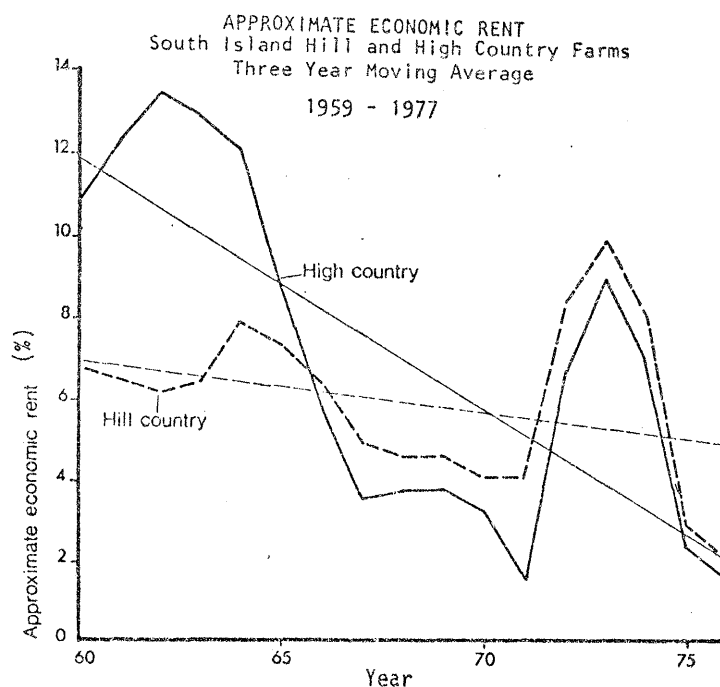
Average 1950 - 1976 interest rates have been approximately:
Improvements nine per cent (first mortgage); stock 11 per cent (second mortgage); plant 13 per cent (hire purchase) and working capital nine per cent (advance).

The estimates of annual costs of capital employed on the land are highly sensitive to changes in interest rates (and opportunity costs of money), thus

the results presented in Table 11, and, graphically, below (Figure 32) must only be regarded as approximations of economic rents earned by unimproved land of hill and high country farms from 1959 to 1977.

The trends in economic rent (as estimated) earned by unimproved land of both hill and high country farmers over the period 1959 - 1977 are shown in Figure 32.

FIGURE 32



Compiled from N.Z. Meat and Wool Boards' Economic Service Data.

The average estimated economic rent earned by unimproved land of hill and high country farms for the period 1959 - 1977 is 5.8 per cent and 6.9 per cent respectively.

The calculated economic rent does not necessarily allow for less than an above optimal use of land resource. Any institutional restraint such as an incorrect classification of land as pastoral land may preclude the use of that land for a purpose which would earn a higher economic rent at an optimal allocation of the land resource. Conversely, any improper use of a land resource for pastoral farming or some other use may lead to the earning of a negative economic rent if all the annual costs of production and conservation are accounted for from the national viewpoint.

ALTERNATIVE METHODS OF SETTING RENT

THE VALUE OF LAND

In the New Zealand real estate market the generally accepted form of ground rent is a percentage of unimproved value of land or the value of land exclusive of improvements.¹ As a pastoral lease is essentially the lease of land for a specific purpose (pastoral farming) under particular conditions (covenants) it is appropriate to consider a rent for pastoral leases as a percentage of the value of land exclusive of improvements as a practicable means of establishing a 'fair annual rent'.

The valuation of land exclusive of improvements under the Land Act 1948, in the case of most pastoral leases, will generally reflect the unimproved value of the land.

The valuation of land exclusive of improvements of pastoral leases, to be valid, must reflect the single purpose to which the land can be put and not be influenced by alternative use possibilities. Generally freehold or renewable lease land has no such restrictions, except those imposed by District Planning Schemes.

Relative to Crown renewable lease farms on high quality land, both lessee and lessor of pastoral leases are subject to a relatively higher risk. These risks should either directly or indirectly (through rebates) be reflected in the rent payable for such properties.

In a valuation-based rental system the lessor's interest in the lease (the LEI) is protected against inflation as it moves according to the price of land. With strong, albeit seldom used, powers of distress held by the Crown over pastoral leases, there is no doubt that the Crown is in a 'secure' position as landlord. It is generally considered that the rental rate should reflect this security.²

The rental rate (R) for a pastoral lease based on valuation of land exclusive of improvements can be derived from the general rental formula:³

$$R = \frac{i[(1+i)^n - (1-i)^n]}{(1+i)^n - 1}$$

when

i = interest rate

l = inflation rate

n = number of years between rent reviews

Table 12 illustrates the rental rate required at three rates of interest and inflation and rental review periods of 1, 5, 11 and 33 years.

TABLE 12

RENTAL RATE REQUIRED
LEVELS OF INTEREST AND INFLATION

Interest i	Inflation l	Years Between Reviews of Rent			
		1	5	11	33
6	4	2.0	2.2	2.4	3.3
9	6	3.0	3.4	3.9	5.7
12	8	4.0	4.6	5.5	8.6

Apart from establishment costs of the pastoral lease tenancy (colonisation, survey, administration), the Crown as lessor has for the most part acted as land administrator rather than as land entrepreneur and thus cannot 'trade' its asset the land, which it holds in trust for the people of New Zealand. Thus the Crown (as the Department of Lands and Survey) has no opportunity cost for its 'assets' in the land. An exception to this is when the Crown reclassifies the land as farm land with consequent rights to the lessee to the freehold over the land. Reclassification of pastoral land as farmland is currently allowed only when there are no apparent water and soil conservation reasons for withholding reclassification. In effect, for 'pastoral land' there is no opportunity cost for alternative investment by the Crown for the value of its assets held in trust as pastoral land.

Because both benefits and disadvantages of pastoral leases to both lessee and

lessor seem equally balanced, there does not appear to be any special case for adjustment of rental rate, either up or down, from that dictated by consideration of interest rates and inflation rates (which reflect the relative liquidity and risk of each party's investment).

OUTPUT

In the case of a pastoral lease, a rent based on the value of output from the farm has the apparent advantage of sharing the risks encountered in pastoral leases between lessee and lessor. In a pastoral lease with mixed wool, sheep and cattle economy, such a shown rent would normally be a proportion of the annual total turnover of the farm adjusted for revenue arising from lessee's improvements (which belong to the lessor), e.g.

$$r = f(a_1(x_1 - x_1^I) + a_2(x_2 - x_2^I) \dots a_n(x_n - x_n^I))$$

when r = rent
 f = function (%) of output
 a = price of products (1...n)
 x_1 = output from lease (incl. inputs)
 x_1^I = output from improvements only

The situation is further complicated by the usual existence of other land tenures (both secure and insecure) having a collective output x^T which are farmed in conjunction with the pastoral lease. The rental formula in this case would be:

$$r = f(a_1(x_1 - x_1^I - x_1^T) + a_2(x_2 - x_2^I - x_2^T) \dots a_n(x_n - x_n^I - x_n^T))$$

Provided the original stock limitation in the lease truly reflects the carrying capacity of the unimproved land/land exclusive of improvements and provided the output from the non-pastoral lease section of the farm can be ascertained, it is probably equitable to determine the output of the lease as a proportion of the original to the current stock limitation.

To account for variations in pastoral leases, the product process would necessarily be those actually received, usually by the lessee.

In establishing the function of the output, due regard would have to be taken of what prudent lessees would pay on the open market for such a lease. There is, however, no generally recognised market currently in operation in New Zealand that would reflect a free market for leases of this nature, thus the derivation of the function (f) for all or any pastoral lease would be highly subjective.

Because of the administration difficulties in detailing the provable factors (function, output, prices) in an equitable shown rent system, it is unlikely that such a system could be implemented.

CARRYING CAPACITY

Pastoral leases issued in terms of the Land Act 1948 attracted a rent based on the carrying capacity of the unimproved run at the date of issue. Adjustments were made in some cases to determine an 'original' carrying capacity, thus taking account of the amount by which lessees' improvements increased carrying capacity. In most cases the stock limitation for the lease was a confirmation of the stock actually grazed on the run at the date of issue of the pastoral lease. A formula for setting the rental rate per 1000 stock units was devised by the Chief Pastoral Lands Officer of the Department of Lands and Survey. This rate (\$140 per 1000 stock units with adjustments for stock performance) was initially within the range 3.2 per cent to 4.3 per cent (average 3.8 per cent) of the value of land exclusive of improvements, or 11c to 17c (average 14c) per stock unit.

To maintain equity between lessee and lessor a rent based on an original carrying capacity of a run must necessarily reflect:

- (a) changes in current market rate per stock unit for pastoral leases;
- (b) the value of any improvements added by the lessee either directly or indirectly;
- (c) technological or extrinsic improvements leading to real increases in carrying capacity.

To establish a fair annual rent based on carrying capacity of a run, an analysis of all sales over recent years and on a continuing basis will be necessary so that the rates per stock unit can be accurately determined. It is, however, relevant to note that this rate will reflect the value of the

land exclusive of improvements.

It is concluded that because the land exclusive of improvements is the origin of the rate per stock unit, then the latter is an inappropriate basis for rents of pastoral leases.

INDEXATION

The close relationship between (a) Farm Land Prices Index,⁴ (b) Grazing Land Prices Index,⁵ (c) value of land exclusive of improvements of pastoral leases, and (d) capital value of pastoral leases, is shown on Table 6 (page 24). Each have a compound growth of between 8.5 per cent and 8.8 per cent over the period 1950 - 1976. The Farm Land and Grazing Land Prices Indices both apply to freehold land.

If all pastoral leases had been issued on the same terms, then upgrading the present rent according to changes in Farm Land Prices would appear to be equitable. However, as evidenced by Figure 3, (page 12) rentals of leases issued after, say, 1956, were set at a decreasing percentage of the land to be leased. Thus, any upgrading of present rentals for existing leases by adjustment according to Farm Land Price Index would perpetuate this inequity.

LAND USE CAPABILITY CLASSIFICATION

The land use capability classification of land as used in soil conservation in New Zealand is 'a systematic arrangement of different kinds of land according to those properties that determine its capacity for permanent sustained production'.⁶ In this sense, 'capability' is used to define 'suitability for productive use' after taking into account the physical limitations the land may have. For land suited only to pastoral use, a land use capability classification may have application in assessing the maximum carrying capacity of a unit of land and collectively of the run as a whole.

Other elements than land use capability make up the value of land for pastoral purposes. These may include location, snow risk, 'balance' of run, and community services available. There are currently differences (albeit relatively minor) in land use capability standards between districts.

Whilst land use capability classification may provide a basis for separating land into units for valuation purposes, it does not appear to be useful for setting

rents for pastoral leases save where such a rent is based on a stock limitation. For reasons previously described, a rent based on a stock limitation is not favoured.

OTHER METHODS

Other possible methods for fixing a 'fair annual rent' that could be considered are:

- (a) Stock net output as an index to rent payable.
- (b) Productive valuation.
- (c) Percentage value of stock carried.
- (d) Arbitration.

An index of production based on a net stock output (including wool production) would be a valuable measure of a run's production capability and in turn rental value. The administration problems inherent in making adjustments to calculated net stock output because of the location, and original stock limitation of the lease, act against the ready adoption of such a system.

Because a productive valuation of land is not necessarily a reflection of all the market forces at work, there has been little use made of such a system in recent years.

A rent based on a percentage of the capital value of the livestock carried is a step away from a rent based on the gross revenue of the livestock and as such is a share rent with the many administration problems applying to pastoral leases as previously described.

There is a large measure of fairness in the system of rent fixing that relies on arbitration to resolve differences. Arbitration may not achieve an 'optimal' solution to rent fixing, but may nevertheless be a good 'second best' solution. A fair system of arbitration requires the services of an arbitrator to judge the merits of each case for both lessee and lessor. To ensure fairness to all it appears essential that such an arbitration be a formal proceeding and the results reported in the law journals and be subject to a higher court. Hitherto rents for pastoral land have, to a large degree, been an arbitration

between the lessee and the lessor's agent.⁷ While noticeable disparities occurred through this arrangement, it did allow for development of a 'special' lessee-lessor relationship which, if well administered, would have achieved the principal purpose for which the pastoral lease was established - namely '.... some control to be exercised over this type of land...'⁸ Through sub-delegation, or failure to enforce authority by the Land Settlement Board, and the advent of de facto administration of Crown land by other agencies, much of this special relationship has been lost or foregone. Given the judicial review and appeal procedures open to lessees there is no doubt that finally many, if not all, pastoral rents will be settled by a form of arbitration.

REBATES

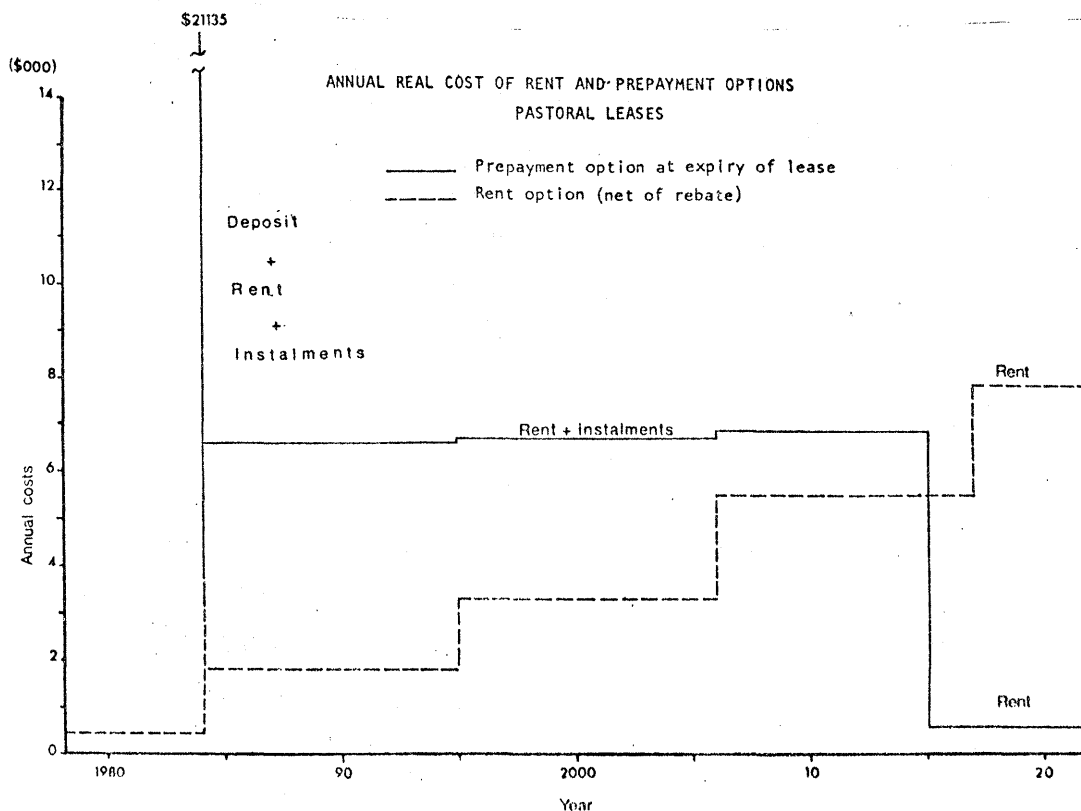
Allowing rebates of rents for improvement to the value of the land leased (e.g. weed control) may be attractive to the lessor as there is an assurance of improved husbandry of the land leased by those seeking a rebate. The basis of the unrebated rent has, however, to be set before rebates could be considered, so that an equitable assessment of the improvements made could be determined.

RIGHT TO PREPAY RENT

Being without a right to acquire the fee simple estate in the land leased, the pastoral lessee is inevitably subject to regular reviews of rentals at amounts related to the value of land exclusive of improvements. Rental values in real terms of pastoral leases have increased annually at a compound rate of 2.6 per cent since 1950 (Table 6, page 24). Along with other farm land values the rental values of pastoral leases are likely to continue to increase at a similar rate unless either the terms of trade or conditions of tenure move markedly against pastoral leases. Any right for pastoral lessees to prepay rent in perpetuity as a means of insulation against the increases in rental value is clearly a valuable right, conferring a higher estate in the land than was held previously.

The annual costs of the two options within the pastoral lease rental proposals (page 15) of the Land Settlement Board have been calculated for the average pastoral lessee with a prospect of experiencing a continuing trend in real terms value of land exclusive of improvements (Figure 33).

FIGURE 33



Lessees opting for the proposed rental option will be required to expend the amount of the proposed suspended rent rebate on capital and maintenance expenditure on the farm (page 15). For the purpose of the above calculation it is assumed that most lessees will be able to meet the prescribed conditions within their normal farm expenditure.

Lessees with available funds and without a more valuable alternative investment opportunity may wish to proceed with the prepayment option either before expiry of their present lease or early thereafter. However, those lessees who will have no difficulty in including the amount of the suspended rent as normal capital or maintenance expenditure are likely to be, initially at least, in a better financial position than if a prepayment option had been taken up at an early stage.

Eventually those lessees who are able to take up prepayment options to advantage will be substantially insulated against the effects of inflation of rental values. Such lessees will, in spite of other conditions of pastoral leases being retained, advance their estate in the land to a level enjoyed by few other Crown lessees.

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